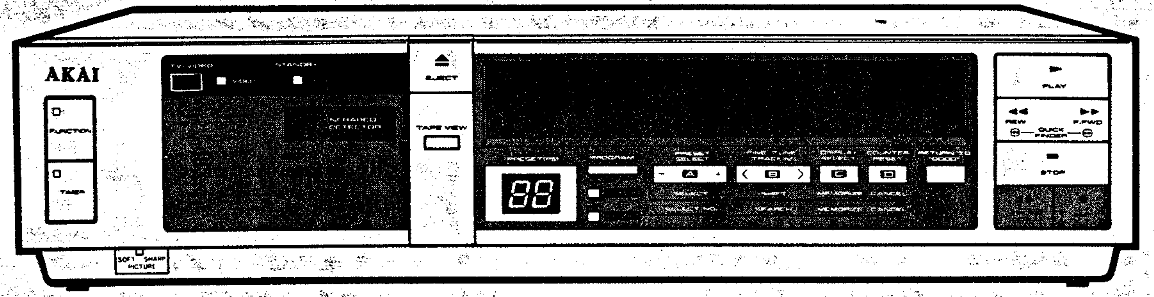
AKAI SERVICE MANUAL


AKAI
FUNCTION
TIMER
EJECT
TAPE VIEW
PLAY
REW
F.FWD
QUICK FINDER
STOP
SOFT SHARP
PICTURE

VIDEO CASSETTE RECORDER

MODEL VS-303 EA/EG/EV-M /EO/ES/EZ

ABBREVIATIONS LIST

ABBREVIATION	EXPLANATION
AC	Alternating Current
ACC	Auto Color Control
A/C	Audio and Control
ADJ	ADJust(ment)
AFC	Auto Frequency Control
AFT	Auto Fine Tuning
AGC	Auto Gain Control
AH(P)	Audio Head (Play Back)
AH(R)	Audio Head (Record)
AL	ALl
AL	ALways
ALC	Auto Level Control
A-SW·P	Audio-SWitching·Pulse
A·MUTE	Audio·MUTE
AUT/MAN	AUTO/MANual
ANT	ANTenna
APC	Automatic Phase Control
ASSY	ASSemblY
BAL	BALance
B/C	Buzz and Charactor
B DOWN	Break DOWN
BGP	Burst Gate Pulse
BLK	BLacK or BLock
BM	Balanced Modulator
BPF	Band Pass Filter
BS	Band Select
BS (SB)	Brake Supply (Supply Brake)
BT (TB)	Brake Takeup (Takeup Brake)
BU	Back Up
B/W	Black and White
CCIR	Comité Consultatif International des Radio Communications
CH (Ch.)	CHannel (Channel)
CK	Color Killer
CLK	CLocK
CLP	CLiP
CM	Capstan Motor
CN	CoNnector
COMP	COMParator
Comp	Comparison
C or R	Cue or Review
CR 1	Cue Review 1 (high)
CSW	Cassette SWitch
CTL	ConTroL
CUE	CUE
CW	Carrier Wave
DAC	Digital to Analog Converter
DC	Direct Current
DEMOD	DEMODulator
DET	DETect (DETector)
DL	Delay Line
DM	Drum Motor
DOC	Drop Out Compensator
D·P·E	Drum·Phase·Error
D·PG	Drum·Pulse Generator
D·TPZ	Drum·TraPeZoid
EE	Electronic to Electronic
EF	Emitter Follower
EM	Eject Motor
EMPHA	EMPHAsis
ENVIN	ENVelope INput
ESW	Eject SWitch
EQ	EQualizer
FE	Full track Erase
FF	Flip-Flop
FG	Frequency Generator
Fig.	Figure
FM	Frequency Modulation
Fo	resonance Frequency
FREQ	FREQuency
FSI	Field Start Inhibit
GND	GrouND
H	Horizontal
HP	Horizontal (sync) Pulse
HPF	High Pass Filter
HT	HeaTer
IC	Integrated Circuit
ID	IDentification
IDL	IDLe (Voltage)
INS	INSert
INV	INVerter
L·CTL	Lamp·ConTroL
LED	Light Emitting Diode
LDI	LoaD Input
LM	Loading Motor
LM STP	Loading Motor SToP
LP	Long Play
LPF	Low Pass Filter
LSW	Loading SWitch
ME-SECAM	Middle East SECAM
MI-COM	MIcro COMputer
MM	Mono-stayble Multi
MRS	Motor ReverSe
NG	Noise Gate
NON-LIN	NON-LINear
N.T.S.C.	National Television System Committee
O MUTE	Output MUTE
OSC	OSCillator
PAL	Phase Alternation Line
PB	Play Back
P-COM	Phase-COMparator
PDN	Power DowN
PG	Pulse Generator
PL, PLG	PLunger (PLunGer)
POS	POSition
PRG	PRoGram
P & S	Power supply & System control
PU	Pick Up (head, pulse)
PWR	PoWeR
Q	Quality factor
RC	Rotary Control
REC	RECord
REF	REFerence
REF-V	REFerence Vertical signal
REG	REGulator
REV (REVW)	REView (REVieW)
REW	REWind
RFB	Radio Frequency Booster
RM	Reel Motor
RM PWR	Reel Motor PoWeR
R·S SW	Record·Safety SWitch
RST (RES)	ReSeT (RESet)
RVS	ReVerSe
S	Sensor, Shield
SC	SimulCast
S CLK	Serial CLocK
S & A	Servo & Audio
SECAM	Séquentiel à Memoire
SEP (SEPA)	SEParator (SEPArator)
SFP	Sync Front Pulse
S & H	Sample and Hold
SLP	Super Long Play
SP	Standard Play
SPD	SPeeD
SRP	Supply Reel Pulse
SRV	SeRVo
SOW	Sync On Word
STBY	STandBY
SW	SWitch
SW'NG	SWitchiNG
SWP	SWitching Pulse
SYNC	SYNChronize
T-AUDIO	Tuner AUDIO
TA-MUTE	Tuner Audio MUTE
TPZ (TRAPE)	TraPeZoid (TRAPEzoid)
TRK	TRacKing
TRP	Take up Reel Pulse
T/U	Take Up
TV	TeleVision
UHF	Ultra High Frequency
UNR	UNRegulated
V	Vertical
VCO	Voltage Controlled Oscillator
VD	Vertical Drive
VF	Voltage for Fine tuning
VHF	Very High Frequency
VHS	Video Home System
VID	VIDeo
VIDEO-J	VIDEO Judge
VIF	Video Intermediate Frequency
VJ	Video Judge
VM	Voltage for Memory
VOB	Video On Blank
VOW	Video On Word
VP	Vertical (sync) Pulse
VT	Voltage for Tuning
WHT	WHiTe
2H	2 Hour (SP)
6H	6 Hour (SLP)

VIDEO CASSETTE RECORDER

MODEL VS-303 EA/EG/EV-M /EO/ES/EZ

SECTION 1 OPERATING MANUAL 3
SECTION 2 SERVICE MANUAL 35
SECTION 3 PARTS LIST 63

VIDEO CASSETTE RECORDER

MODEL VS-303 EA/EG/EV-M /EO/ES/EZ

SECTION 1 OPERATING MANUAL 3

SECTION 2 SERVICE MANUAL 35

SECTION 3 PARTS LIST 63

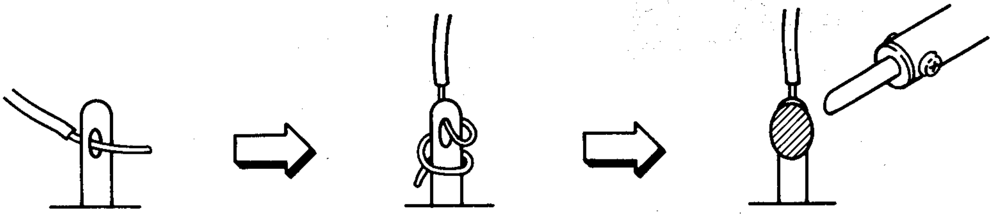
SAFETY INSTRUCTIONS

SAFETY CHECK AFTER SERVICING

Confirm the specified insulation resistance between power cord plug prongs and externally exposed parts of the set is greater than 10 Mohms, but for equipment with external antenna terminals (tuner, receiver, etc.) and is intended for $\boxed{C}$ or $\boxed{A}$, specified insulation resistance should be more than 2.2 Mohms (ground terminals, microphone jacks, headphone jacks. line-in-out jacks etc.)

PRECAUTIONS DURING SERVICING

1. Parts identified by the ⚠ symbol parts are critical for safety.
   Replace only with parts number specified.
2. In addition to safety, other parts and assemblies are specified for conformance with such regulations as those applying to spurious radiation. These must also be replaced only with specified replacements.
   Examples: RF converters, tuner units, antenna selector switches, RF cables, noise blocking capacitors, noise blocking filters, etc.
3. Use specified internal wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads
4. Use specified insulating materials for hazardous live parts. Note especially:
   1) Insulation Tape
   2) PVC tubing
   3) Spacers (Insulating Barriers)
   4) Insulation sheets for transistors
   5) Plastic screws for fixing microswitch (especially in turntable)
5. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.), wrap ends of wires securely about the terminals before soldering.



6. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.).
7. Check that replaced wires do not contact sharp edged or pointed parts.
8. Also check areas surrounding repaired locations.
9. Use care that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

VOLTAGE CONVERSION

The operation voltage of VS-303EA/EG/EV-M/EO/ES/EZ are preset at the factory as follows.

VS-303EA	240V AC 50 Hz
VS-303EG	220V AC 50 Hz/60 Hz
VS-303EV-M	230V AC 50 Hz/60 Hz
VS-303EO	220V AC 50 Hz
VS-303ES	250V AC 50 Hz
VS-303EZ	230V AC 50 Hz

VS-303EG (110V/220V switchable), VS-303EV-M (115V/230V switchable), VS-303ES (220V/250V switchable) have a voltage conversion capability.

In case that the voltage at your area differs from the factory preset voltage.

1. Do not plug in before the voltage conversion finished.
2. Set the VOLTAGE SELECTOR located on the rear panel by a flat type screwdriver or by some other means.

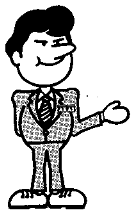
SECTION 1

OPERATING MANUAL

TABLE OF CONTENTS

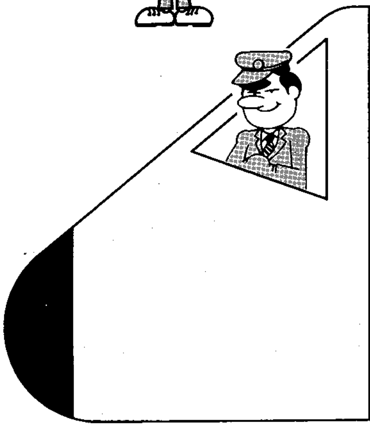
A QUICK TRIP THROUGH THE OPERATIONS OF THE VS-303 ON THE AKAI VIDEO EXPRESS 4
LET'S ACQUAINTED WITH THE AKAI VS-303 AND THE INTERACTIVE MONITOR SYSTEM 6
LET'S MAKE THE RIGHT CONNECTIONS 8
LET'S CHECK THE REAR PANEL OF THE AKAI VS-303 BEFORE OPERATING 9
HOW TO TURN ON AND OFF THE AKAI VS-303 10
  HOW TO LOAD THE BATTERIES OF THE RC-V603 REMOTE CONTROL UNIT 10
LET'S SET YOUR TV TO THE VIDEO CHANNEL FOR THE AKAI VS-303 11
LET'S SET THE TIMER TO THE ACTUAL TIME 12
  IF YOU WANT TO CONFIRM THE ACTUAL TIME AND DATE 14
  IF YOU WANT TO RESET THE ACTUAL TIME AND DATE 14
ON THE REMOTE CONTROL UNIT RC-V603 15
  ON VIDEO CASSETTE TAPES 15
LET'S PLAY BACK A PRE-RECORDED TAPE 16
  TRACKING CONTROL, QUICKFINDER, PICTURE CONTROL 16
  STILL PICTURE, RETURN TO "0000" 17
LET'S PRESENT THE AKAI VS-303 WITH TV STATIONS 18
ADDITIONAL PRESET STATION OPERATIONS 20
  IF YOU WANT TO CANCEL A PRESET TV STATION 20
  IF THE PICTURE FROM A PRESET TV STATION IS NOT CLEAR 20
  STATION SEARCH IS CARRIED OUT IN THIS ORDER 20
CONVENIENT PLAY BACK FEATURES OF THE VS-303 21
  DISPLAY SELECT, EXTERNAL RECORDING, TAPE VIEW SYSTEM 21
LET'S RECORD A TV PROGRAM 22
LET'S LOOK AT THE PROGRAMMING DISPLAY OF THE AKAI VS-303 23
HOW TO PROGRAM THE AKAI VS-303 FOR AUTOMATIC RECORDING 24
LET'S PROCEED WITH AUTOMATIC RECORDING 26
  IF YOU WANT TO CONFIRM A PROGRAM 26
  TO RESET A PROGRAM AFTER IT HAS BEEN MEMORIZED 27
  TO CANCEL A PROGRAM AFTER IT HAS BEEN MEMORIZED 28
  IF YOU WANT TO RECALL A FINISHED OR CANCELLED PROGRAM 28
AN EXAMPLE OF 4-WEEK TIMER SETTING 29
LET'S MAKE YOUR AKAI VS-303 STOP RECORDING AND TURN ITSELF OFF AUTOMATICALLY AT A PROGRAMMED TIME 30
  TO CANCEL SLEEP TIME OPERATION DURING SLEEP-TIME RECORDING 31
PROBLEM` LET'S CHECK 32
EXPANDING YOUR HOME VIDEO CENTER 34
FINAL NOTES 34

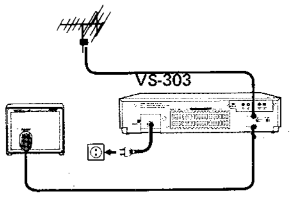
THIS OPERATING MANUAL IS A PART OF THE OPERATOR'S MANUAL (EA/EZ), REFER TO THE OPERATOR'S MANUAL FOR THOROUGH INFORMATION.



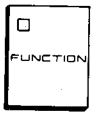
A quick trip through the operations of the VS-303 on

Caution: If any of the steps on these pages fail to produce the desired result, consult the detailed operations inside this manual before going any





VS-303 RF OUT – TV UHF Antenna in
VS-303 ANT IN – UHF Antenna
See p.7



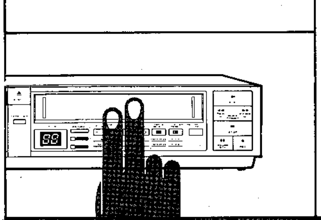
VS-303 Plugged in
FUNCTION button ON
TV ON

Caution

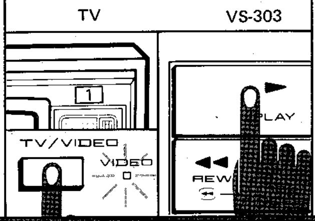
Moving the video tape recorder from a cold place to a warm place, will cause dew condensation on the drum and the video heads inside the unit. If recording or playback is carried out in this state, the heads may become dirty and the tape may be damaged.
To prevent this from occuring, the power plug must be plugged in for about one hour with the FUNCTION button off, before starting recording or playback of a video cassette tape. See p.9

CONNECTIONS

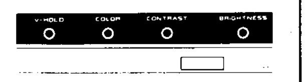
With the VS-303's FUNCTION button set to ON, and the TV turned ON, insert a prerecorded tape into the VS-303. The TAPE VIEW system will light.



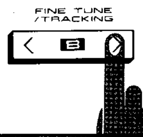
Set the TV to the video channel. Set the VS-303's TV/VIDEO selector to VIDEO. Depress the PLAY button of the VS-303.



Adjust the brightness, contrast, color, and tint of the playback picture with the TV's tuning controls until a satisfactory picture is obtained.

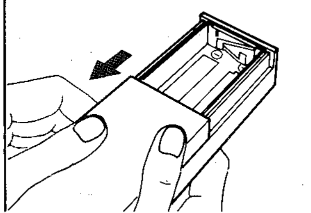


If a good picture cannot be obtained, try depressing the ‹▣› button of the VS-303.
The TRACKING display will appear on the TV screen. Continue depressing the ‹▣› button until a clear picture and sound is obtained. See p.15-16

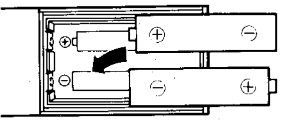


PLAY

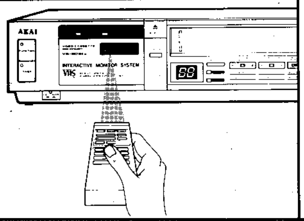
Remove the battery compartment cover of the RC-V603.



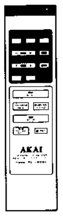
Insert the 2 AA size batteries in the proper direction.
Replace the cover.



Aim the RC-V603 at the Infrared Detector window on the front of the VS-303 and press a button. The remote control will operate up to approx. 25 feet away from the VS-303.

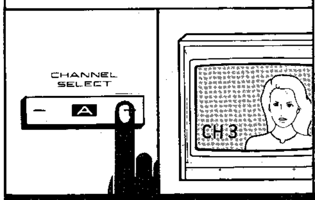


The buttons of the RC-V603 are operated the same way as those on the front panel of the VS-303. See p.14.

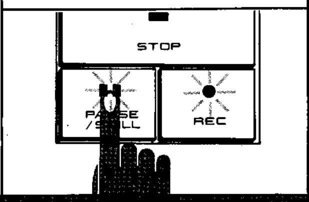


REMOTE CONTROL OPERATION

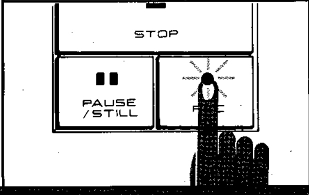
Turn on the VS-303 and the TV and set to the video channel. Set the channel of the program you want to record with the –▣+ button of the VS-303.



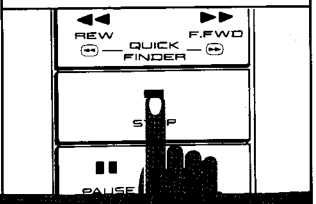
Insert a blank tape into the VS-303. Depress the VS-303's PAUSE button. Note that the REC button begins flashing.



When the program you want to record is about to begin, depress the REC button again to begin recording.



Depress the PAUSE button if you want to stop temporarily (less than 4 min.) or depress the STOP button to end recording.

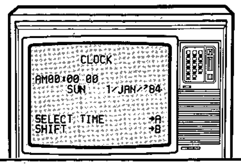


TV RECORDING

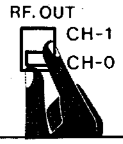
he Akai video express

rther.

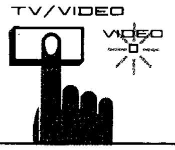
VIDEO CHANNEL SETTING



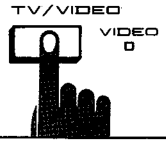
Depress the VS-303's FUNCTION button to send a signal for the time display to the TV screen.
Turn on the TV and set the TV's tuning control to channel 1 for Model EA, and channel 3 for Model EZ.



If channel 1 (3 for EZ) is being used for broadcasting in your area, set the TV's channel selector to channel 0 (2 for EZ), and set the channel selector switch on the rear panel of the VS-303 the same way. Set the VIDEO/TV selector on the front of the VS-303 to VIDEO. See p. 10.



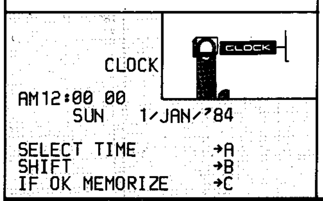
NOTE:
There is a VIDEO/TV selector on the front of the Akai VS-303. Depress this selector (the VIDEO indicator will light) to watch programs from the Akai VS-303's tuner, or a prerecorded tape.



Depress this selector again (the VIDEO indicator will go off) to watch a TV program selected with the TV's channel selector.

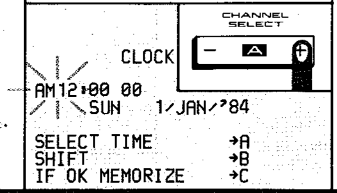
CLOCK SETTING

Depress the CLOCK button of the VS-303 to display the information for setting the clock to the actual time.



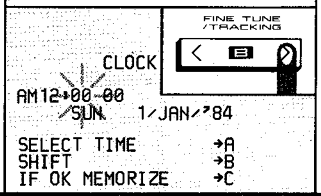
```
CLOCK
AM12:00 00
    SUN   1/JAN/'84
SELECT TIME      →A
SHIFT            →B
IF OK MEMORIZE   →C
```

To change any indicator, depress the − or + side of the −A+ button until the correct no., day or month appears.



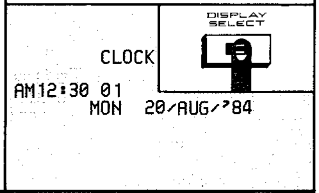
```
CLOCK
AM12:00 00
    SUN   1/JAN/'84
SELECT TIME      →A
SHIFT            →B
IF OK MEMORIZE   →C
```

To move on to the next indicator, or to move back if you make a mistake, depress the < or > side of the <B> button.



```
CLOCK
AM12:00 00
    SUN   1/JAN/'84
SELECT TIME      →A
SHIFT            →B
IF OK MEMORIZE   →C
```

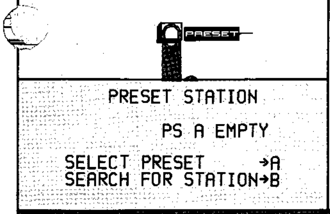
When everything is correctly set, depress the C button to memorize. The clock will start running and the display will turn off after a few seconds. See p. 11-12.



```
CLOCK
AM12:30 01
    MON  20/AUG/'84
```

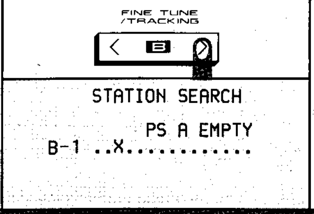
STATION PRESETTING

To select stations with the VS-303, the station must first be preset. With the VS-303 and the TV turned ON, and the TV set to the video channel, depress the PRESET button of the VS-303 to display the presetting information.



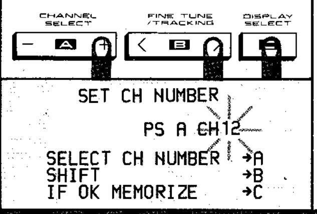
```
PRESET STATION
      PS A EMPTY
SELECT PRESET     →A
SEARCH FOR STATION→B
```

Depress the <B> button and the VS-303 will begin searching for a TV channel to memorize into the VS-303's tuning control. When one is found, the picture will be displayed along with the information for assigning it a preset letter.



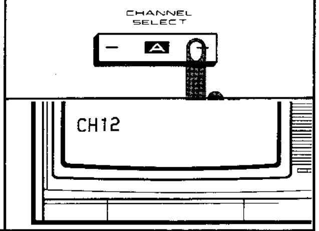
```
STATION SEARCH
      PS A EMPTY
B-1 ..X............
```

Depress the −A+, <B>, and C, buttons according to the instructions on the screen to assign a number and letters to each preset channel selected. Then, memorize and continue to preset stations.



```
SET CH NUMBER
      PS A CH12
SELECT CH NUMBER →A
SHIFT            →B
IF OK MEMORIZE   →C
```

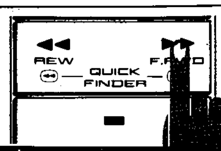
Up to 16 channels can be preset.
To select a preset channel, you can now use the VS-303's −A+ button instead of the TV's channel selector. See p. 17-19.



SPECIAL OPERATIONS

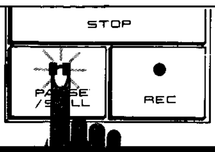
QUICK FINDER

Use the Akai Quick Finder system during any playback mode (PLAY or STILL) to quickly search for any section of tape. The picture will contain some "noise bars" and no sound will be heard. Press any playback mode again to release Quick Finder. See p.15.



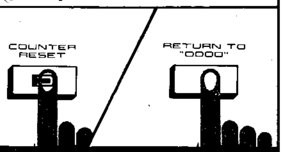
STILL

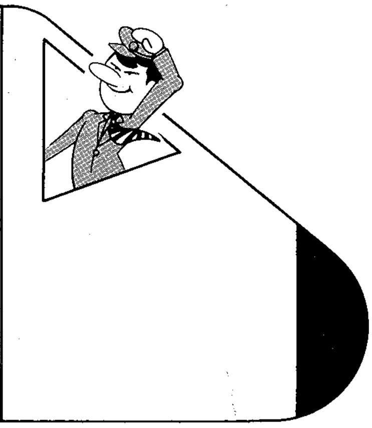
Use the PAUSE/STILL button to stop the action during playback. Use the −A+ button to provide vertical stability to the picture. Repeatedly depress the <B> button to remove any "noise bars" from the still picture. Press PLAY to resume normal speed. See p.16.

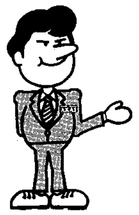


RETURN TO "0000"

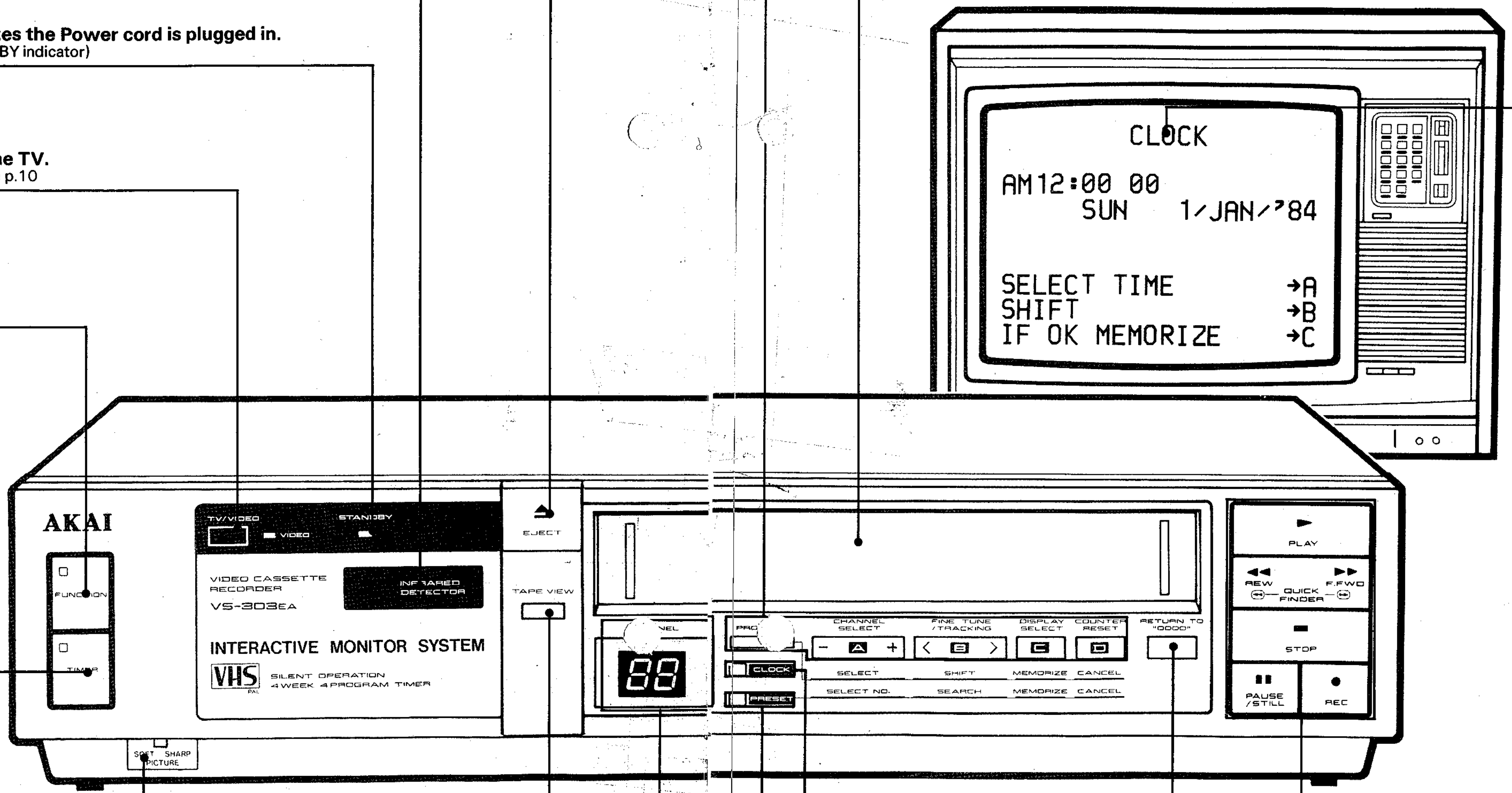
Use the Return to "0000" button to instantly return to a specified position on the tape. When you find the position you want to return to, use the C button to reset the counter to "0000"
Now when you want to return to this point, press the RETURN TO "0000" button. The tape will automatically return to that point and stop. See p.16







Let's get acquainted with the Akai VS-303 and the Interactive Monitor System


CLOCK
AM12:00 00
SUN 1/JAN/'84
SELECT TIME →A
SHIFT →B
IF OK MEMORIZE →C
AKAI
FUNCTION
TIMER
TV/VIDEO
VIDEO
STANDBY
VIDEO CASSETTE RECORDER
VS-303EA
INFRARED DETECTOR
INTERACTIVE MONITOR SYSTEM
VHS
PAL
SILENT OPERATION
4 WEEK 4 PROGRAM TIMER
EJECT
TAPE VIEW
CHANNEL SELECT
FINE TUNE /TRACKING
DISPLAY SELECT
COUNTER RESET
RETURN TO "0000"
SELECT
SHIFT
MEMORIZE
CANCEL
SELECT NO.
SEARCH
MEMORIZE
CANCEL
CLOCK
PRESET
PLAY
REW
F.FWD
QUICK FINDER
STOP
PAUSE /STILL
REC
SOFT SHARP PICTURE

To eject the video cassette tape.
(EJECT button).

To receive the remote control signal from the Akai Wireless Remote Control Unit RC-V603
- Keep this window clean for remote control operation.

Indicates the Power cord is plugged in.
(STANDBY indicator)

To select the input signal to the home TV.
(VIDEO/TV selector button and indicator) See p.10

To turn on and off the Akai VS-303.
(FUNCTION button).

To stand by for automatic recording.
(TIMER button)

To manually activate the Tape View System.
TAPE VIEW button. See p.20

To soften or sharpen the video picture.
(SOFT/SHARP PICTURE) control.

Preset channel number display.
(CHANNEL Display)

To tune in TV stations.
(PRESET button).

To automatically record a TV program.
(PROGRAM, −△+, <⊟>, ⊏, and ⊡ buttons).

Load the video cassette tape here.

DISPLAY

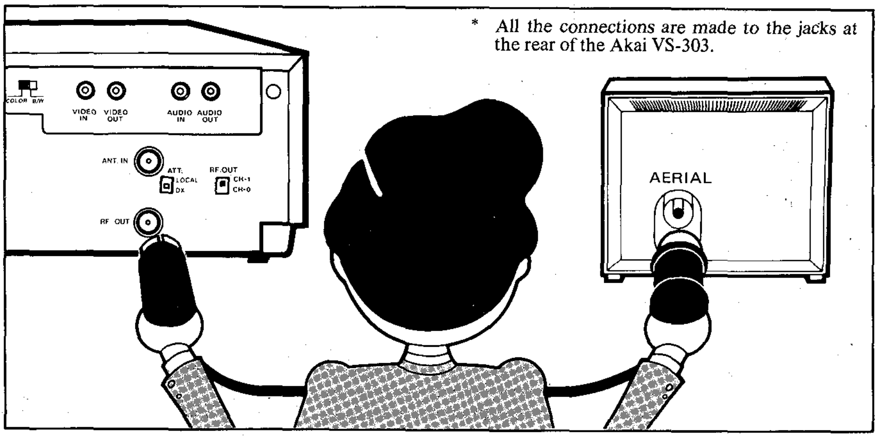
To run the tape for recording or playback.
(Tape transport buttons)

To quickly return to a selection.
(RETURN TO "0000" button).

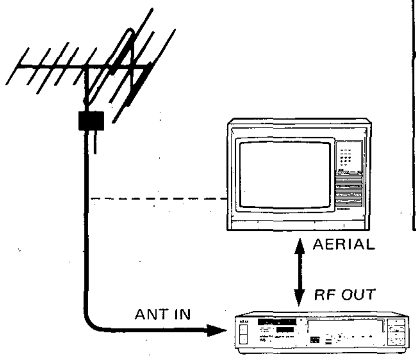
To set the actual time and date.
(CLOCK button).

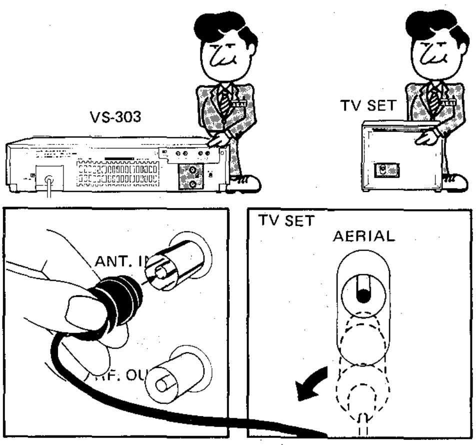
Let's make the right connections

There is a tuner inside your Akai VS-303 for station selection. This tuner is just like the one inside your TV. For this reason, your TV antenna must be connected to the Akai VS-303.


COLOR B/W
VIDEO IN
VIDEO OUT
AUDIO IN
AUDIO OUT
ANT IN
ATT. LOCAL DX
RF OUT CH-1 CH-0
RF OUT
AERIAL

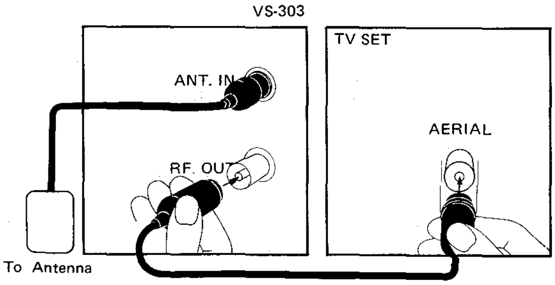
* All the connections are made to the jacks at the rear of the Akai VS-303.


AERIAL
RF OUT
ANT IN


VS-303
TV SET
ANT. IN
RF. OUT
TV SET
AERIAL

1

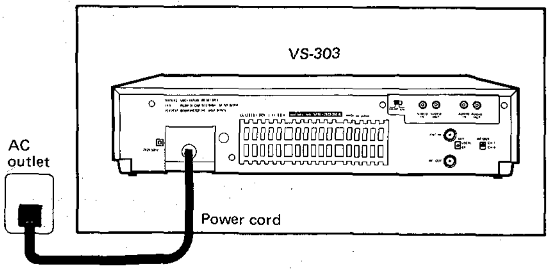
Unplug the TV antenna cable from your TV and plug it into the antenna input jack (ANT. IN) of the Akai VS-303.


VS-303
ANT. IN
RF. OUT
To Antenna
TV SET
AERIAL

2

Plug one end of the aerial cable supplied into the RF OUT jack of the Akai VS-303 and plug the other end into the aerial jack of your TV.

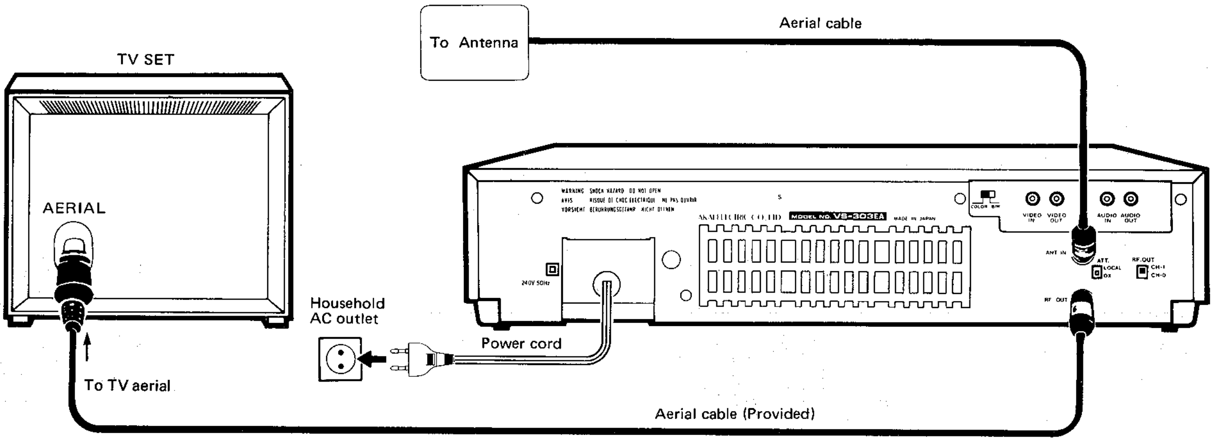
* The cable can only be connected one way.

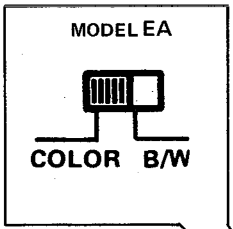

VS-303
AC outlet
Power cord

3

Plug the power cord into the household AC outlet.

Let's check the rear panel of the Akai VS-303 before operating

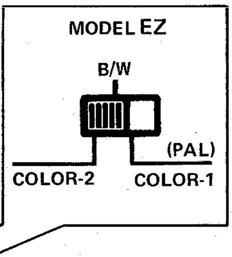

To Antenna
Aerial cable
TV SET
AERIAL
Household AC outlet
Power cord
To TV aerial
Aerial cable (Provided)


MODEL EA
COLOR
B/W

Video mode selector

The video mode selector is used to select the type of signal to be recorded or played back.
This selector should normally be set to COLOR.

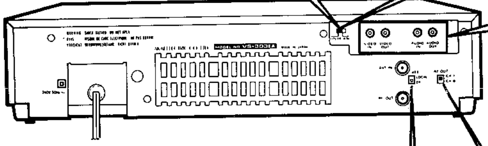
COLOR	Normally keep the indicator set to this position for reception of all systems recording or playback.
B/W	Set to this position for CCIR standard monochrome system(black and white)for recording or playback.


MODEL EZ
B/W
(PAL)
COLOR-2
COLOR-1

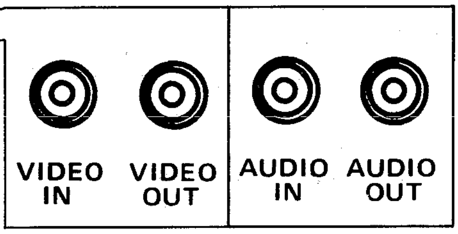
Video mode selector

The video mode selector is used to select the type of signal to be recorded or played back.
This selector should normally be set to COLOR.

COLOR-2	Set to this position for Middle East SECAM (system B/G) color system recording or playback.
B/W	Set to this position for CCIR standard monochrome system (black and white) for recording or playback.
COLOR-1 (PAL)	Set to this position for PAL color (PAL) system recorging or Playback.



The rechargeable battery pack.
The VS-303 is equipped with a rechargeable battery pack which supplies power to the memory circuits of the VCR for up to 7 days whenever the power is cut off.
Refer to page 33 for details.

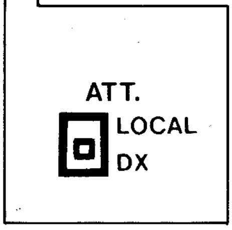

VIDEO IN
VIDEO OUT
AUDIO IN
AUDIO OUT

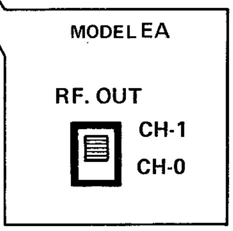
Expanding the system

These jacks allow you to expand the use of your VS-303 to enhance your home video entertainment.
By connecting another VCR to these jacks you can tape dub from one VCR to the other to reproduce or upgrade your video cassettes. To use these jacks, select the EXT function with the VS-303's -▣+ button.
See page 20, 33.

On the LOCAL/DX attenuator switch

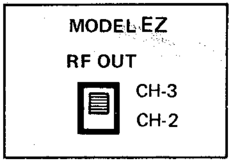
The LOCAL/DX switch on the rear panel of the VS-303 is used to adjust the signal reception of the tuner section.
If the picture develops wavy lines during reception of a local TV station broadcast, it may be that the signal reception is too strong. In that case, move this selector to the LOCAL position to attenuate the signal strength.
If TV reception during, say a broadcast by satellite, is poor and contains too much picture "noise", set this switch to the DX position to improve the picture reception.
(Normally, leave this switch in the DX position.)


ATT.
LOCAL
DX


MODEL EA
RF. OUT
CH-1
CH-0

RF OUT CH ADJ

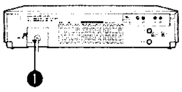
Use this adjustment control for tuning the VCR to the video channel. See p. 10


MODEL EZ
RF OUT
CH-3
CH-2

How to turn on and off the Akai VS-303

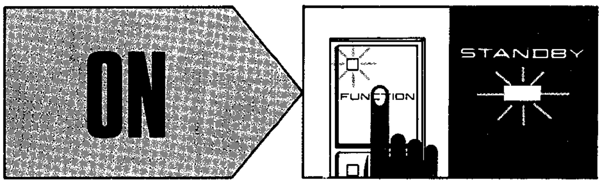
Check before starting

AKAI VS-303

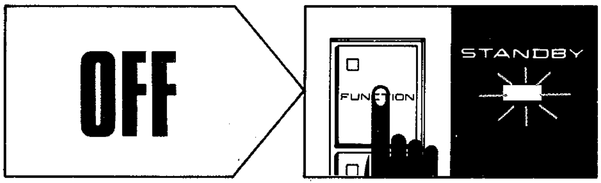


❶ Power cord is properly connected to the household AC outlet.

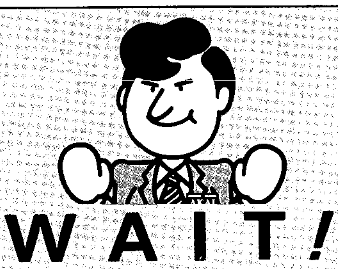
Depress the FUNCTION button to turn on the Akai VS-303.
- * Its indicator will light.



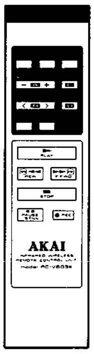
Depress the FUNCTION button again to turn off the Akai VS-303.
- * It's indicator will go off.
- * The STANDBY indicator will remain lit.
- * The timer inside the Akai VS-303 will continue to function.



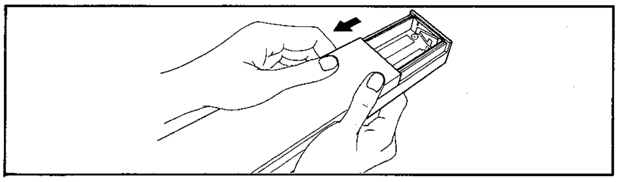
Note:
The VS-303 has a STANDBY indicator, this indicator lights whenever the power cord is plugged in. The indicator is independent of the FUNCTION button.



Caution
Moving the video tape recorder from a cold place to a warm place, or using it in a humid place will cause dew condensation on the drum and the video heads inside the unit. If recording or playback is carried out in this state, the heads may become dirty and the tape may be damaged. This could also result in a malfunction of the machine itself.
To prevent this from occuring, the VS-303 should be plugged in for about one hour with the FUNCTION button off, before starting recording or playback of a video cassette tape.
This is particularly important when a video cassette is inserted for the first time after purchase of the video cassette recorder.

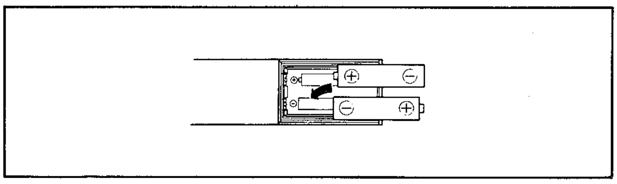


How to load the batteries for the optional Akai RC-V603



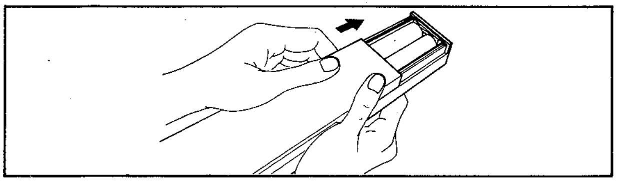
1

Slide open the battery compartment cover.



2

Insert two AA, R6 or equivalent size batteries into the battery compartment as shown in the illustration.



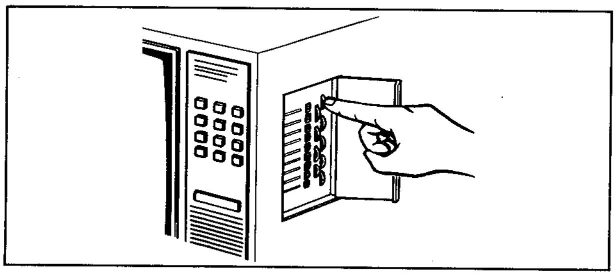
3

Slide the battery compartment cover closed.

NOTE:
When changing the batteries, change all the batteries at the same time.

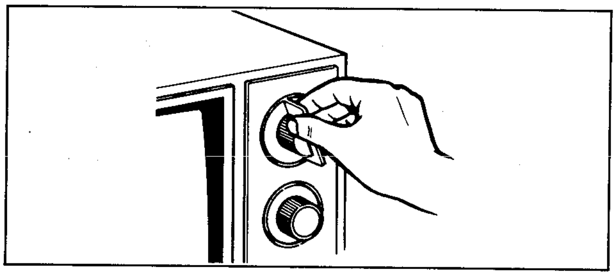
Let's set your TV to the video channel for the Akai VS-303

The Akai VS-303 sends out a signal similar to that transmitted by a TV station. By tuning your TV (to the video channel) to receive this signal, you can select programs from the Akai VS-303 as you would select a program with the TV's channel selector. Before beginning, set the VS-303's VIDEO/TV button to VIDEO.



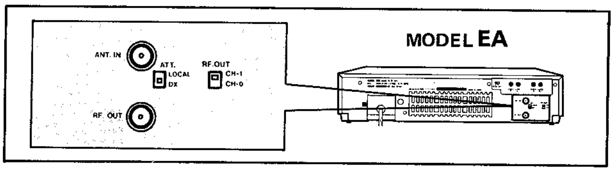
For a push-button type channel selection TV:

Depress the function button of the VS-303 to send the signal for Clock setting to the TV screen. Set the TV to Ch 1 (ch 3 for Model EZ). If Ch 1 (ch 3 for Model EZ)is being used for broadcasting in your area, set the TV to Ch 0 (ch 2 for Model EZ), and adjust the channel selector switch on the back of the VS-303 to the same channel. If CH1 or CH0 (ch 3 or ch 2 for Model EZ) is not present on your TV, select an unoccupied channel and adjust to obtain a clear picture of the clock programing information.
When setting the TV's selector position, particularly with an electronic tuner, it is usually more convenient if the position which is shown when the TV is first switched on is used as the video channel. Generally, this channel is the top one (in a vertical arrangement) or the furthest left one (in a horizontal arrangement).



For dial type TV tuners:

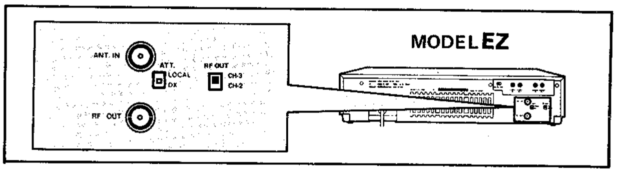
Select CH1 or CH0 (ch 3 or ch 2 for Model EZ) depending on which one is unoccupied. If the clock setting information is not clear, push in the TV's fine tuning adjustment knob and adjust for the best picture quality possible.
Set the channel selector switch on the rear panel of the VS-303 to match the TV setting.
Note: These operations should be carried out with your TV's Automatic Fine Tuning (AFT) or Automatic Frequency Control (AFC) turned off. Turn it back on when these operations are completed.

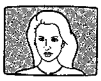
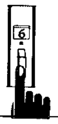
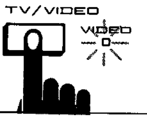
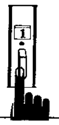


VIDEO/TV selector

The VIDEO/TV selector is used to select the signal sent to the TV. When Video is selected, the VIDEO display is illuminated. When TV is selected, the VIDEO display is turned off. When the VCR is turned on, or when the PLAY button is depressed, the VIDEO/TV selector is automatically set to Video.

If difficulties are encountered in trying to obtain a clear picture or a picture with color, the following optional method may be used:
Set the TV to the video channel.
Turn ON the VCR
Playback a prerecorded tape. (Refer to page 15).
Adjust the TV receiver's fine-tuning knob until a clear picture with good color is obtained.



Operation	Akai VS-303		TV		
To watch a TV program as it is being recorded:	TV/VIDEO VIDEO	Set the VIDEO/TV selector to VIDEO.		Set the TV to the video channel.	
To watch one program while recording another: * Not possible when CATV (cable) with a converter is used.	TV/VIDEO VIDEO	Set the VIDEO/TV selector to TV.		Select the channel you want to watch with the TV's channel selector.	
To watch a pre-recorded video cassette tape if your TV is not equipped with a LINE IN (VIDEO IN) jack, i.e. the VS-303 is connected to the TV's antenna terminals:.		The VIDEO/TV selector is automatically set to VIDEO.		Set the TV to the video channel.	
To watch TV programs.	TV/VIDEO VIDEO	Set the VIDEO/TV selector to VIDEO and select the channel with the channel selector buttons or turn off the Akai VS-303.	If selecting the channel with the Akai VS-303, set the TV to the video channel. If the Akai VS-303 is turned off, select the channel with the TV's channel selector.		

Now you are ready to watch prerecorded tapes. Or, choose a preset staion for TV reception from the Akai VS-303 by following the presetting operations on p. 17-18.

Let's set the timer to the actual time

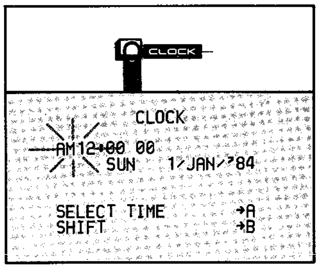
There is a 24 hour digital timer inside the Akai VS-303. To set this timer to the actual time, please follow this procedure, using as an example: AM 12:30 MON 3/SEP/'84.

Are you ready?
LET'S START

1

Depress the CLOCK button to display the information for setting the time to the actual time on your TV screen.

* Skip this step if the information is already displayed on the TV screen.

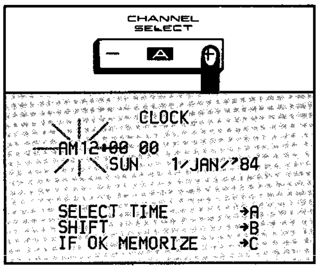


CLOCK
AM12:00 00
SUN 1/JAN/'84
SELECT TIME →A
SHIFT →B

2 HOURS

To follow the instruction "SELECT TIME → A", depress the -A+ button to select the correct hours.

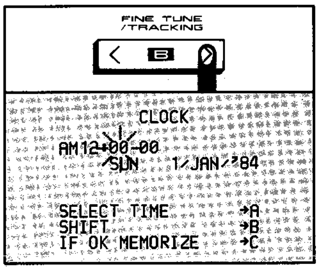
1, 2, 3 .... AM or PM



CLOCK
AM12:00 00
SUN 1/JAN/'84
SELECT TIME →A
SHIFT →B
IF OK MEMORIZE →C

3

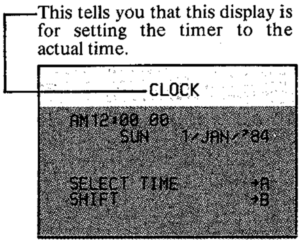
To follow the instruction "SHIFT → B", depress the <B> button to shift to the next item to be set: minutes.



CLOCK
AM12:00 00
SUN 1/JAN/'84
SELECT TIME →A
SHIFT →B
IF OK MEMORIZE →C

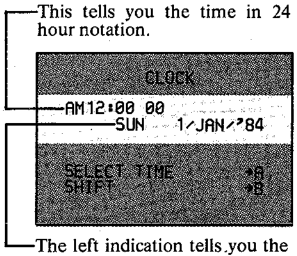
On the Clock set display

This tells you that this display is for setting the timer to the actual time.



CLOCK
AM12:00 00
SUN 1/JAN/'84
SELECT TIME →A
SHIFT →B

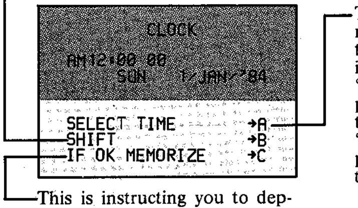
This tells you the time in 24 hour notation.



CLOCK
AM12:00 00
SUN 1/JAN/'84
SELECT TIME →A
SHIFT →B

The left indication tells you the day of the week and the right indications tell you the date/month/year.

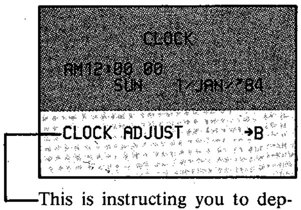
This is instructing you to depress the <B> button to choose the item to be set. The chosen item will flash on and off.



CLOCK
AM12:00 00
SUN 1/JAN/'84
SELECT TIME →A
SHIFT →B
IF OK MEMORIZE →C

This is instructing you to depress the C button when you are satisfied with the indications you have set.

This is instructing you to depress the -A+ button to select the indication for the flashing item.
"SELECT TIME" will be displayed when you are to select the correct time.
"SELECT DAY" will be displayed when you are to select the correct day of the week.
"SELECT DATE" will be displayed when you are to select the correct day of the month.
"SELECT MONTH" will be displayed when you are to select the correct month.
"SELECT YEAR" will be displayed when you are to select the correct year.



CLOCK
AM12:00 00
SUN 1/JAN/'84
CLOCK ADJUST →B

This is instructing you to depress the <B> button when you want to reset the actual time and date.

On the -A+ and <B> buttons

-A+ button:
The -A+ button is used to select the indication for the flashing item chosen by the <B> button.

⊕ side: Depress this side when you want to increase the indication.

⊖ side: Depress this side when you want to decrease the indication.

Holding down either side will change the indication continuously.

<B> button:
The <B> button is used to choose the item you want to set. The chosen item will flash on and off.

> side: Depress this side when you want to set an item which is after the item that is now flashing.

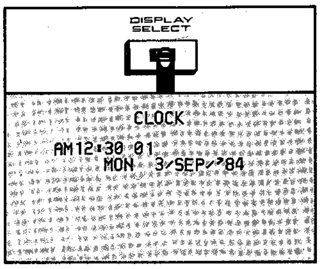
< side: Depress this side when you want to set an item which is before the item that is now flashing.

The full display is maintained for approximately 3 seconds. To recall the time see page 13.

13 MEMORIZE

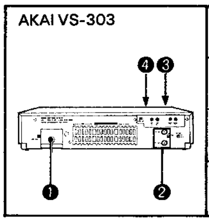
You have now correctly set the timer to the actual time.
To follow the instruction "IF OK, MEMORIZE → C", depress the C button to memorize the data.

* The timer will start keeping time.

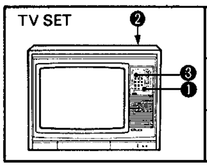


CLOCK
AM12:30 01
MON 3/SEP/'84

Check before starting



❶	Power cord is properly connected to the household AC outlet.
❷	All the components are properly connected.
❸	FUNCTION button is turned on.
❹	TV/VIDEO selector set to VIDEO.

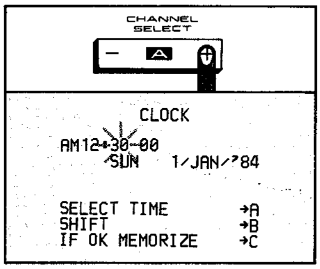


❶	Turned on.
❷	Properly connected.
❸	Set to the video channel.

4 MINUTES

To follow the instruction "SELECT TIME → A", depress the -A+ button to select the correct minutes.

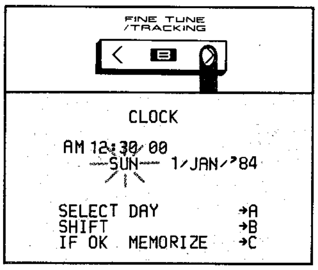
00, 01, 02, ... up to 59



```
CLOCK
AM12:30 00
SUN    1/JAN/'84

SELECT TIME      →A
SHIFT            →B
IF OK MEMORIZE   →C
```

5

To follow the instruction "SHIFT → B", depress the <B> button to shift to the next item to be set: day of the week.

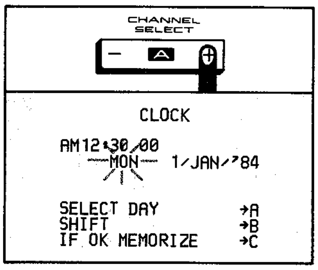


```
CLOCK
AM 12:30 00
SUN    1/JAN/'84

SELECT DAY       →A
SHIFT            →B
IF OK MEMORIZE   →C
```

6 DAY OF WEEK

To follow the instruction "SELECT DAY → A", depress the -A+ button to select the correct day of the week.

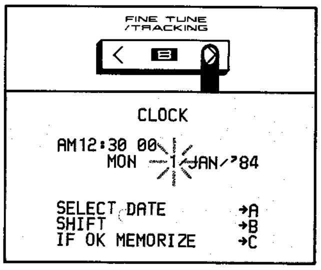
SUN, MON, TUE, WED, THU, FRI or SAT



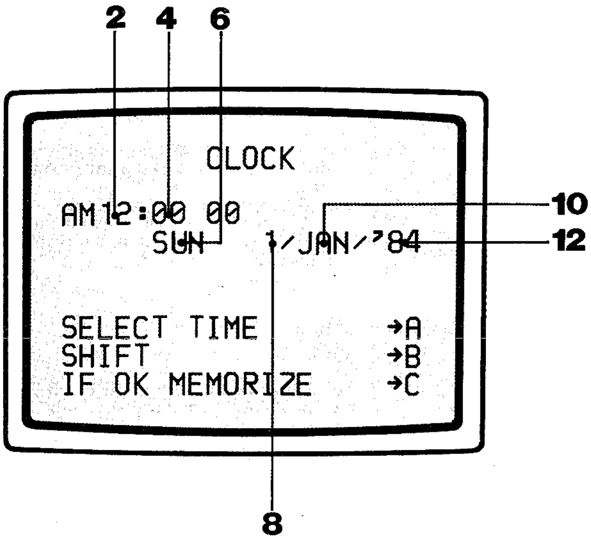
```
CLOCK
AM12:30 00
MON    1/JAN/'84

SELECT DAY       →A
SHIFT            →B
IF OK MEMORIZE   →C
```

7

To follow the instruction "SHIFT → B", depress the <B> button to shift to the next item to be set: date of the month.



```
CLOCK
AM12:30 00
MON    1/JAN/'84

SELECT DATE      →A
SHIFT            →B
IF OK MEMORIZE   →C
```

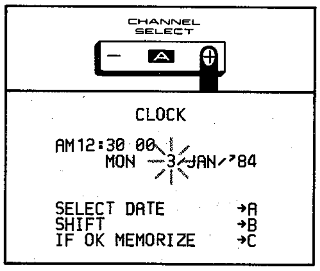


```
CLOCK
AM12:00 00
SUN    1/JAN/'84

SELECT TIME      →A
SHIFT            →B
IF OK MEMORIZE   →C
```

8 DATE OF MONTH

To follow the instruction "SELECT DATE → A", depress the -A+ button to select the correct date.

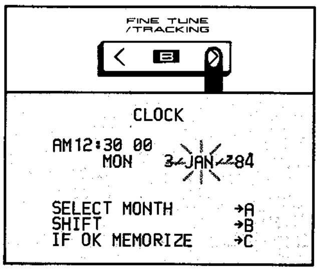
1, 2, 3, ... up to 31



```
CLOCK
AM12:30 00
MON    3/JAN/'84

SELECT DATE      →A
SHIFT            →B
IF OK MEMORIZE   →C
```

9

To follow the instruction "SHIFT → B", depress the <B> button to shift to the next item to be set: month.

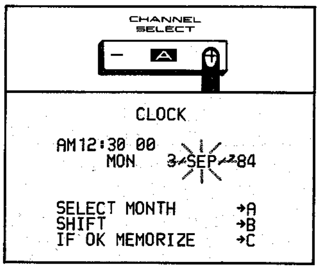


```
CLOCK
AM12:30 00
MON    3/JAN/'84

SELECT MONTH     →A
SHIFT            →B
IF OK MEMORIZE   →C
```

10 MONTH

To follow the instruction "SELECT MONTH → A", depress the -A+ button to select the correct month.

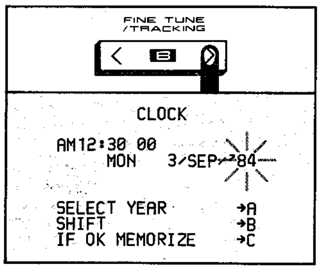
JAN, FEB, MAR ..... or DEC.



```
CLOCK
AM12:30 00
MON    3/SEP/'84

SELECT MONTH     →A
SHIFT            →B
IF OK MEMORIZE   →C
```

11

To follow the instruction "SHIFT → B", depress the <B> button to shift to the next item to be set: year.

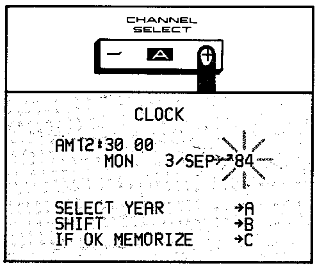


```
CLOCK
AM12:30 00
MON    3/SEP/'84

SELECT YEAR      →A
SHIFT            →B
IF OK MEMORIZE   →C
```

12 YEAR

To follow the instruction "SELECT YEAR → A", depress the -A+ button to select the correct year.

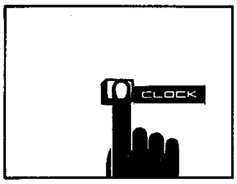
84, 85, 86 .... up to 99

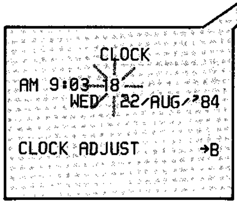


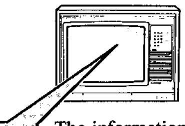
```
CLOCK
AM12:30 00
MON    3/SEP/'84

SELECT YEAR      →A
SHIFT            →B
IF OK MEMORIZE   →C
```

If you want to confirm the actual time and date

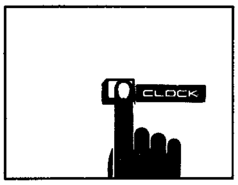
Depress the CLOCK button.




CLOCK
AM 9:03 18
WED 22/AUG/'84
CLOCK ADJUST →B



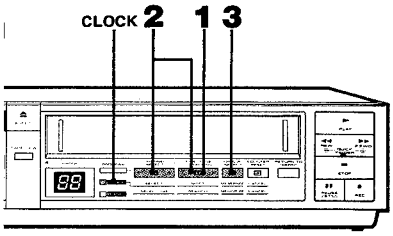
The information on the left will be displayed on your TV screen.

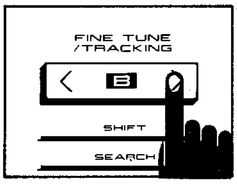


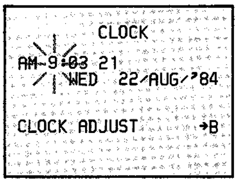
To remove the information from your TV screen, depress the CLOCK button again.

If you want to reset the actual time and date

As an example, we will change the date from 22 AUG to 29 AUG.

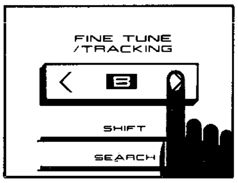


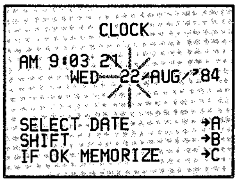


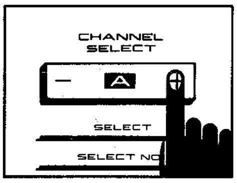

CLOCK
AM 9:03 21
WED 22/AUG/'84
CLOCK ADJUST →B

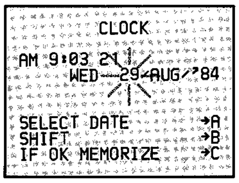
1

- Depress the CLOCK button to display the information for resetting the timer to the actual time.
- To follow the instruction "CLOCK ADJUST → B", depress the <▣> button to display the information for setting the timer to the actual time.



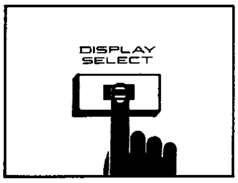

CLOCK
AM 9:03 21
WED 22/AUG/'84
SELECT DATE →A
SHIFT →B
IF OK MEMORIZE →C

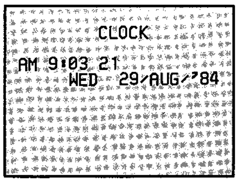



CLOCK
AM 9:03 21
WED 29/AUG/'84
SELECT DATE →A
SHIFT →B
IF OK MEMORIZE →C

2

To follow the instruction "SHIFT → B", depress the <▣> button again and again until the item you want to reset flashes on and off. Then to follow the instruction "SELECT TIME/ DAY/ DATE/ MONTH/ YEAR → A", depress the -▣+ button to reset the item.
Reset other items in the same manner. After you have reset all incorrect items, go to the next step.




CLOCK
AM 9:03 21
WED 29/AUG/'84

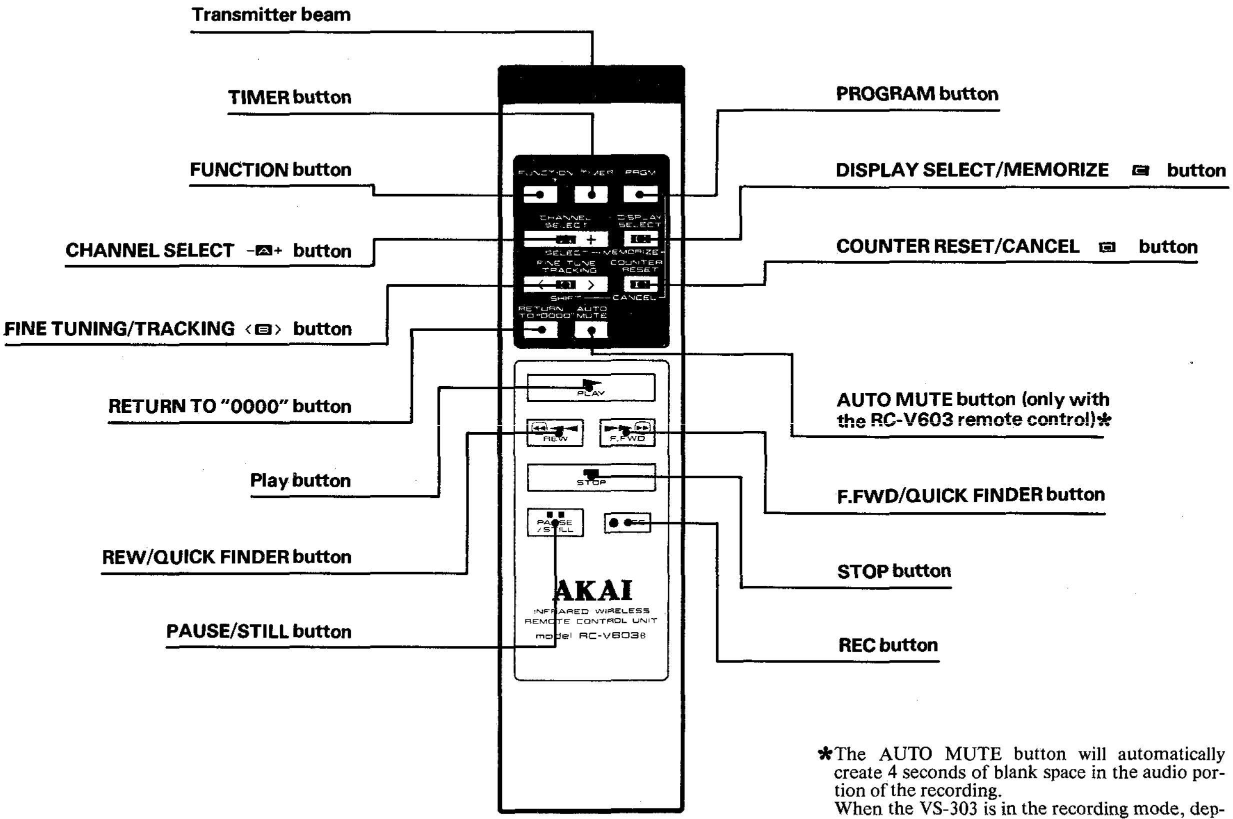
3

Depress the ▣ button to memorize the new data.

NOTE:
During the procedure for setting the timer to the actual time (previous page), any item can be reset by using the -▣+ and <▣> buttons in the same manner.

On the remote control unit RC-V603

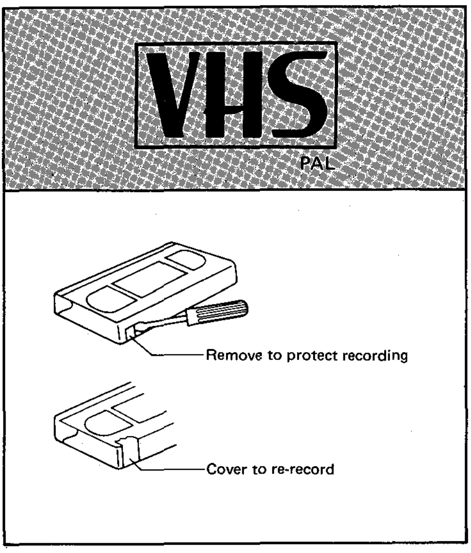
The operation buttons of the Akai RC-V603 are used the same way as the operation buttons on the front panel of the Akai VS-303 except for the EJECT and CLOCK buttons which do not appear on the RC-V603, and the AUTO MUTE button which does not appear on the front panel of the VS-303.


Transmitter beam
TIMER button
FUNCTION button
CHANNEL SELECT -▭+ button
FINE TUNING/TRACKING ‹▭› button
RETURN TO "0000" button
Play button
REW/QUICK FINDER button
PAUSE/STILL button
PROGRAM button
DISPLAY SELECT/MEMORIZE ▭ button
COUNTER RESET/CANCEL ▭ button
AUTO MUTE button (only with the RC-V603 remote control)*
F.FWD/QUICK FINDER button
STOP button
REC button
PLAY
REW
F.FWD
STOP
PAUSE /STILL
AKAI
INFRARED WIRELESS REMOTE CONTROL UNIT
model RC-V603E

*The AUTO MUTE button will automatically create 4 seconds of blank space in the audio portion of the recording.
When the VS-303 is in the recording mode, depress the AUTO MUTE button. The VS-303 will stop recording sound for 4 seconds, then it will go into the REC/PAUSE mode. The video portion of the recording is not affected by the AUTO MUTE button.

On Video cassette tapes

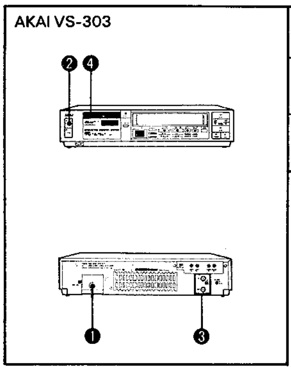
- Only VHS video cassette tapes may be used with the Akai VS-303.
- To protect a recording, remove the recording defeat tab with a screwdriver. To re-record, cover the cavity with a piece of adhesive tape.
- Never touch the tape with your fingers.
- Never open the video cassette tape case.
- Store standing on end in a well ventilated place, away from objects with strong magnetic fields and away from bright lighting.


VHS
PAL
Remove to protect recording
Cover to re-record

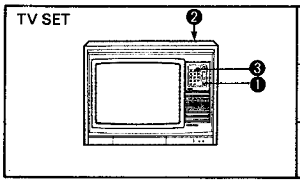
NOTE:
- Before recording or playing back a video cassette tape, be sure to forward the tape slightly so that the leader tape (the transparent part of the tape) is not in the head path.

Let's play back a pre-recorded tape

Check before starting



❶	Power cord is properly connected to the household AC outlet.
❷	FUNCTION button is turned on.
❸	All the components are properly connected.
❹	TV/VIDEO selector set to VIDEO.



❶	Turned on.
❷	Properly connected.
❸	Set to the video channel.

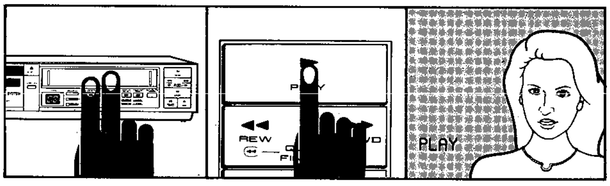
Important

A video cassette tape can be loaded or unloaded only when the Akai VS-303 is plugged in.
Insert the video cassette tape correctly into the cassette loading compartment and give it a little push.
On the VS-303, this can be done even if the FUNCTION button has not been previously depressed. When a tape is loaded this way, the VS-303 will be turned on automatically.

* Follow the markings on the video cassette tape to correctly insert it into the cassette loading compartment. If the video cassette tape is not inserted correctly it will be ejected.

To play the tape, depress the PLAY (►) button.

* "PLAY" will be displayed on the TV screen for approximately 3 seconds.



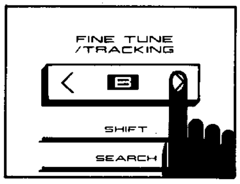
Whenever the end of the tape is reached, the tape will automatically rewind to the beginning.

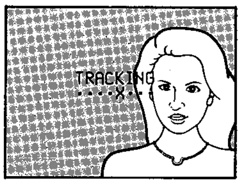
NOTE:
There is a 3 to 4 second delay before playback starts, while the tape moves into position.
If you wish to begin play immediately, prepare the tape by forwarding to the exact point where you wish to begin play. Depress the PLAY button and then immediately depress the PAUSE button (▮▮). When you are ready to begin, depress the PLAY (►) button again and the tape will start immediately.

Note: To prevent damage to the tape, the VS-303 will automatically switch to the STOP mode after more than 4 min. in PAUSE.

TRACKING control

There may be disturbances in the playback picture. This can occur when you play back a tape recorded with another video cassette recorder. To improve the picture, depress the ‹▤› button.
The tracking display will appear on the TV screen. The "X" is normally set to center of the tracking display.





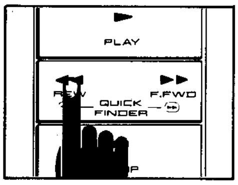
To improve the picture, depress the ‹▤› button on the – or + side. The "X" moves to indicate TRACKING is taking place.

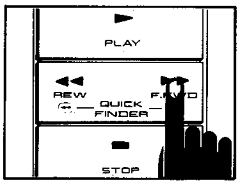
* To carry out the tracking operation slowly, depress and release the ‹▤› button. *(Holding down the button will move the "X" continuously). If you release the ‹▤› button for too long however, the display will disappear. In that case, depress the ‹▤› button again.
When the picture is clear, release the button to stop tracking.

* The display will disappear a few seconds later.

Quick Finder

Use the Akai quick finder system during playback to visually locate any point on a recorded tape. The tape will be played back very quickly and no sound will be heard during quick finder operation.



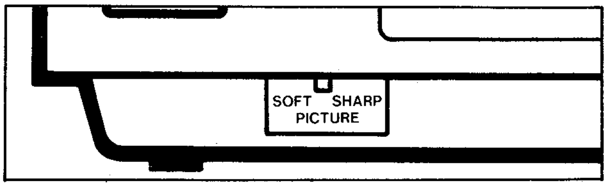


Depress the QUICK FINDER (⏪) or (⏩) button. The picture will go forward or backward very quickly. When you reach the point you are looking for, depress the PLAY (►) button to resume normal playback.

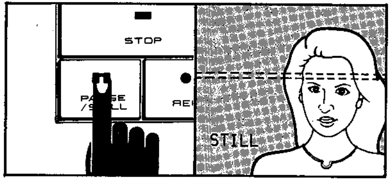
Note: There will be disturbances in the picture during quick finder operation. This is normal and does not indicate a problem with the VS-303.

SHARP/SOFT PICTURE control

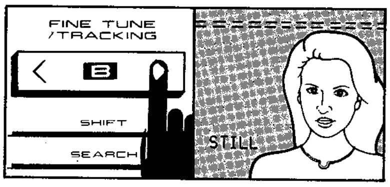
Use this 3 position switch to soften or sharpen the image on the TV screen. The switch should normally be left in it's PICTURE (center) position.



Still picture playback

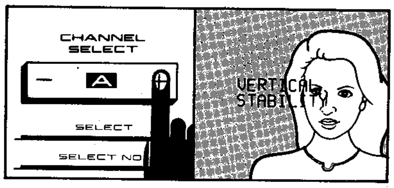


During playback, you can obtain a still picture by depressing the PAUSE/STILL (❚❚) button.
No sound will be heard and there will be noise bars during still picture playback.
To resume normal playback depress the PLAY (►) button.



- **To move the noise bars**

The noise bars which appear during still picture playback can be positioned on the TV screen so that you can look clearly at the details you want. All you have to do is repeatedly depress the <▣>button until the noise bars are positioned where you want them to be. Each press of the <▣> button will advance the tape by one frame.



- **If the still picture vibrates**

If the still picture vibrates, depress the – or + side of the –▣+ button. The display for "VERTICAL STABILITY" will be shown on the TV screen. Release the button when the vibration is reduced.

* To carry out this operation more slowly, depress and release the –▣+ button. However, if you release the –▣+ button for too long, the display will disappear. In that case, depress the –▣+ button again.

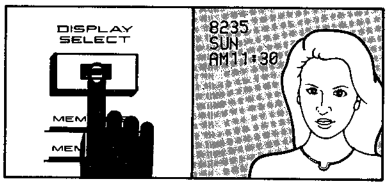
Frame by Frame advance
After placing the VS-303 in the STILL mode, you can advance the tape one frame at a time by repeatedly depressing the PAUSE/STILL (❚❚) button.

* The Akai VS-303 does not have the same properties as broadcasting equipment. Therefore some noise bars and vibrations will appear on the picture during quick finder and still playback.

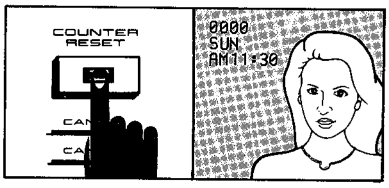
* During quick finder and still playback, the color may disappear from your picture. This is normal.

RETURN TO "0000"

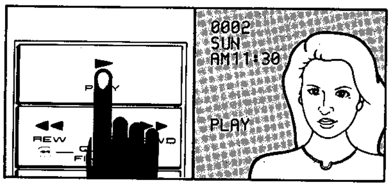
Use the RETURN TO "0000" system to quickly return to the beginning of any tape segment in either the play or record modes.



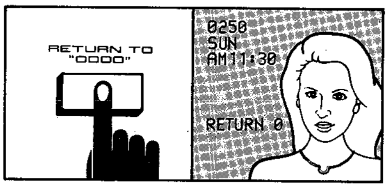
1 When you have located the point on the tape to which you want to return, repeatedly depress the ▣ button until the tape counter is displayed on the TV screen.



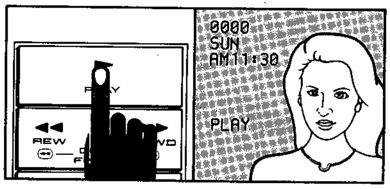
2 Depress the ▣ button to reset the tape counter to "0000".



3 Depress the PLAY (►) button for at least 1 second to begin playback.
* "PLAY" will be displayed on the TV screen for approximately 3 seconds.



4 When you are ready to return to the point where you began playback, depress the RETURN TO "0000" button. The tape will rewind to the beginning of the program (in other words, to the counter reading of "0000") and stop.

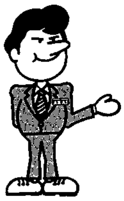


5 To repeat the process , depress the PLAY (►) button again.
NOTE:
To use the RETURN TO "0000" system during recording, depress the REC (●) button instead of the PLAY (►) button in step 3.

NOTES:
To Unload a tape
Depress the EJECT (▲) button. The video cassette tape will be ejected. Take out the video cassette tape.

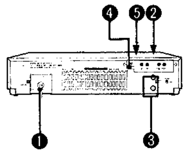
The EJECT (▲) button can be depressed any time except during automatic recording and sleep time recording.

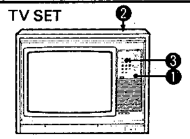
When a tape is inserted, the tape counter is automatically set to "0000". After a timer program is carried out, the tape counter will remain set to the point where recording was finished. When you turn the VS-303 back on, simply depress the RETURN to "0000" button. The tape will rewind to the beginning of the timer recorded program and stop.



Let's Preset the Akai VS-303 with TV stations

Check before starting

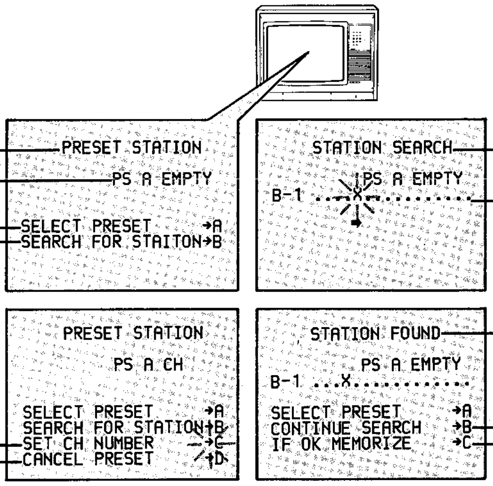
AKAI VS-303		
	❶	Power cord is properly connected to the household AC outlet.
	❷	FUNCTION button is turned on.
	❸	All the components are properly connected.
	❹	Video mode selector is set properly.
	❺	TV/VIDEO selector set to VIDEO.

TV SET		
	❶	Turned on.
	❷	Properly connected.
	❸	Set to the video channel.

The Akai VS-303 must be tuned to all the locally available TV stations. We call this procedure "presetting". Up to 16 TV stations can be preset.

There is an automatic station search system inside the Akai VS-303 which searches for and tunes in TV stations. We call this searching for and tuning in of TV stations "station search".

On the preset station display



```
PRESET STATION
       PS A EMPTY

SELECT PRESET     →A
SEARCH FOR STAITON→B
```

```
 STATION SEARCH
      PS A EMPTY
B-1 ...X..........
```

```
PRESET STATION
       PS A CH

SELECT PRESET     →A
SEARCH FOR STATION→B
SET CH NUMBER     →C
CANCEL PRESET     →D
```

```
 STATION FOUND
        PS A EMPTY
B-1 ...X..........

SELECT PRESET   →A
CONTINUE SEARCH →B
IF OK MEMORIZE  →C
```

This tells you that this display is for presetting the Akai VS-303 with TV stations.

"PS" stands for "preset station". The letter beside the "PS" is the preset station letter. (A through P)
When "EMPTY" is displayed as well, it means that this PRESET is not memorized with a station.

This is instructing you to depress the -▣+ button to select the PS letter.

This is instructing you to depress the ‹▣› button to start searching for stations.

This is instructing you to depress the ▣ button to set the CH number.

This is instructing you to depress the ▣ button to cancel the preset TV station.

This tells you that station search is in progress.

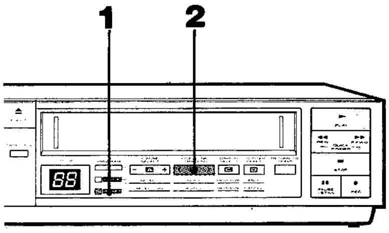
This tells you that TV stations are being searched. During station search, the "X" will move.

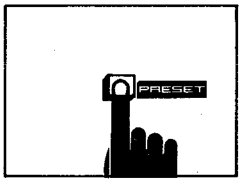
This tells you that a TV station has been found (in other words, tuned in) and station search has stopped.

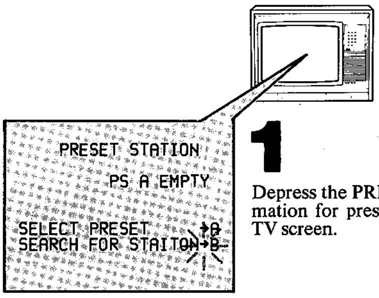
This is instructing you to depress the ‹▣› if you want to continue searching for TV stations.

This is instructing you to depress the ▣ button to memorize the TV station.

How to preset stations



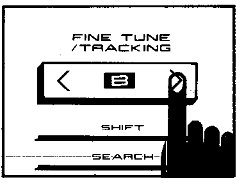


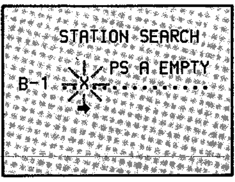


```
PRESET STATION
       PS A EMPTY

SELECT PRESET     →A
SEARCH FOR STAITON→B
```

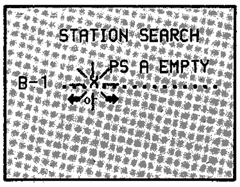
1

Depress the PRESET button to display the information for presetting the Akai VS-303 on your TV screen.





```
 STATION SEARCH
      PS A EMPTY
B-1 ..X..........
```



```
 STATION SEARCH
      PS A EMPTY
B-1 ..X..........
      or
```

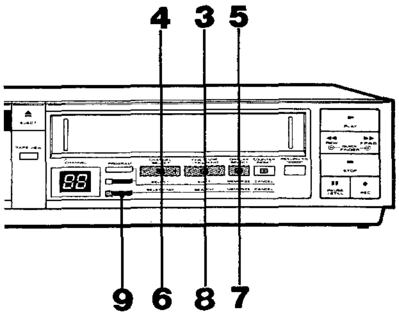
2 You can preset the Akai VS-303 automatically or manually:

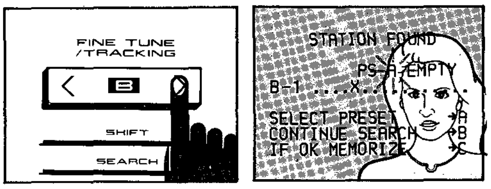
AUTO

To follow the instruction "SEARCH FOR STATION → B", depress the ‹▣› button just once. The "X" will move from the left to right (regardless of whether the < or > side is depressed), visually indicating the search for TV stations.

MANUAL

To follow the instruction "SEARCH FOR STATION → B", keep depressing the < or > side of the ‹▣› button.
The "X" will move towards the left when the < side is depressed and towards the right when the > side is depressed, visually indicating the search for TV stations.




FINE TUNE /TRACKING
<
B
>
SHIFT
SEARCH
STATION FOUND
PS A EMPTY
B-1 ....X...
SELECT PRESET →A
CONTINUE SEARCH →B
IF OK MEMORIZE →C

3

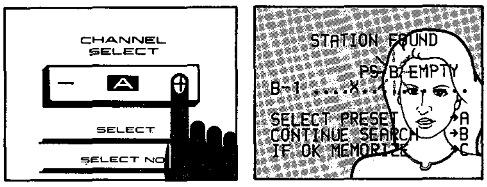
AUTO

Station search stops when a TV station is found (i.e. tuned in) and this information and a program from the found TV station will be displayed.

MANUAL

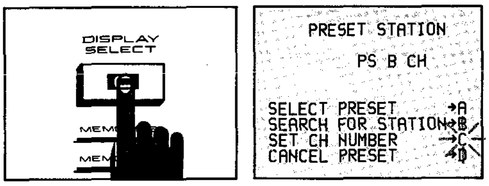
When a station is found (i.e. tuned in), release the button. The information will be displayed.

- ● If the display and the program are not clear, the TV station may be incapable of being memorized and TV search should be re-started Depress the < ⊟ > button to re-start station search from where the previous station search stopped.
- ● If you do not want to memorize the station, depress the < ⊟ > button to resume station search.


CHANNEL SELECT
−
A
+
SELECT
SELECT NO
STATION FOUND
PS B EMPTY
B-1 ....X...
SELECT PRESET →A
CONTINUE SEARCH →B
IF OK MEMORIZE →C

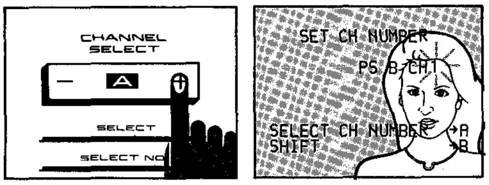
4

To follow the instruction "SELECT PRESET. → A", depress the -⊠+ button to select the preset channel (PS) letter.
A, B, C, ... up to P.


DISPLAY SELECT
C
MEM
MEM
PRESET STATION
PS B CH
SELECT PRESET →A
SEARCH FOR STATION →B
SET CH NUMBER →C
CANCEL PRESET →D

5

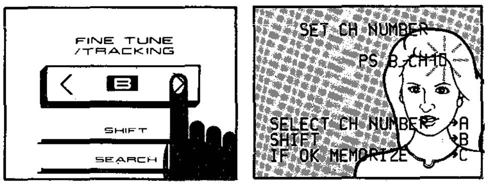
To follow the instruction "IF OK, MEMORIZE → C", depress the ⊟ button to memorize the TV station into the selected preset channel number.


CHANNEL SELECT
−
A
+
SELECT
SELECT NO
SET CH NUMBER
PS B CH1
SELECT CH NUMBER →A
SHIFT →B

6

PRESET Station CH Number

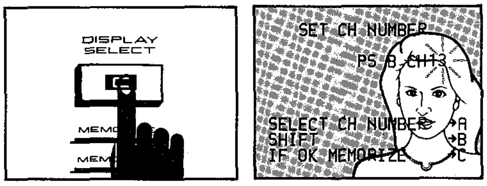
To follow the instruction "SET CH NUMBER → C", depress the ⊟ button and select the first number with the -⊠+ button. (1, 2, 3, ... up to 9).


FINE TUNE /TRACKING
<
B
>
SHIFT
SEARCH
SET CH NUMBER
PS B CH16
SELECT CH NUMBER →A
SHIFT →B
IF OK MEMORIZE →C

7

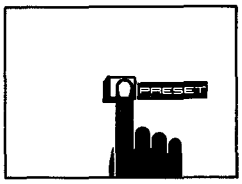
To follow the instruction "SHIFT → B", depress the < ⊟ > button to shift to set the next number.

* The letter A is included in this section for designating cable stations.


DISPLAY SELECT
C
MEM
MEM
SET CH NUMBER
PS B CH13
SELECT CH NUMBER →A
SHIFT →B
IF OK MEMORIZE →C

8

Set the next number with the -⊠+ button.
To follow the instruction "IF OK, MEMORIZE → C", depress the ⊟ button to memorize the TV station number.

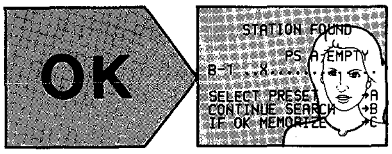


9

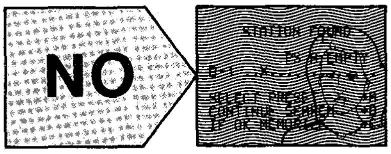
Repeat the above steps until you have preset all the locally available TV stations.
To stop station search operation, depress the PRESET button again. The display will disappear from the TV screen.

Is a TV station tuned in properly?

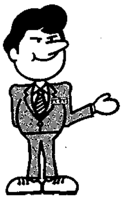
The automatic station search system searches for and tunes in TV stations. This searching for TV stations is indicated by the movement of the "X". Searching stops when a TV station is tuned in. A program from the tuned in TV station will be displayed on your TV screen.


OK
STATION FOUND
PS A EMPTY
B-1 ..X.....
SELECT PRESET →A
CONTINUE SEARCH →B
IF OK MEMORIZE →C

When the display and the program from the tuned in TV station are clear, you can memorize the station.


NO
STATION FOUND
PS A EMPTY
B-1 ..X.....
SELECT PRESET →A
CONTINUE SEARCH →B
IF OK MEMORIZE →C

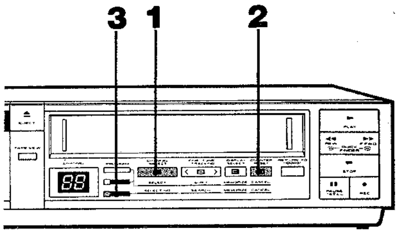
When the display and the program from the tuned in TV station are not clear, the signal from the TV station is not strong enough for clear reception. In that case, the TV station may be incapable of being memorized and TV search should be restarted. This is done by depressing the < ⊟ > button.

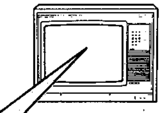


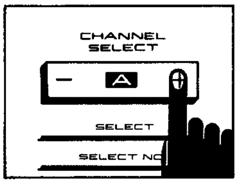
Additional preset station operations

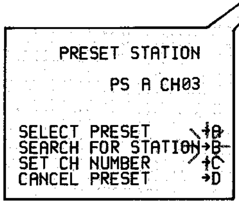
If you want to cancel a preset TV station

Depress the PRESET button.





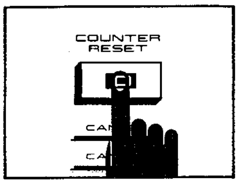


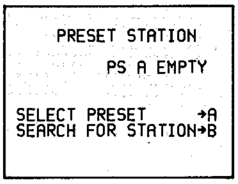


```
PRESET STATION
        PS A CH03

SELECT PRESET      →A
SEARCH FOR STATION→B
SET CH NUMBER      →C
CANCEL PRESET      →D
```

1

To follow the instruction "SELECT PRESET → A", depress and hold the -A+ button until the TV station number you want to cancel is displayed.

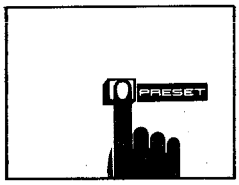




```
PRESET STATION
        PS A EMPTY

SELECT PRESET      →A
SEARCH FOR STATION→B
```

2

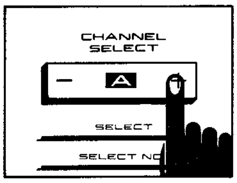
To follow the instruction "CANCEL PRESET → D" depress the ▣ button to cancel the preset TV station. "EMPTY" will be displayed to indicate that the TV station is canceled.

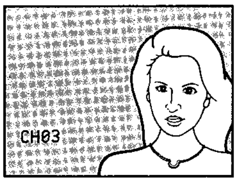


3

To remove the display, depress the PRESET button.

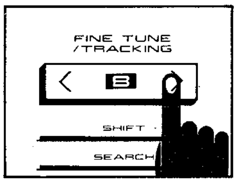
If the picture from a preset TV station is not clear.

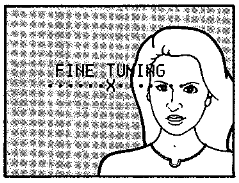




If the color is off when a preset TV station is selected with the -A+ button, use the <▣> button to fine tune it in.

Depress the <▣> button to show the display for fine tuning.



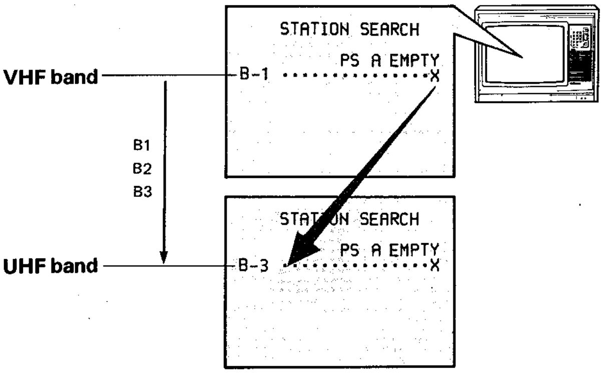


Depress the < side to move the "X" to the left and the > side to move the "X" to the right.
- * Holding down the button will move the "X" continuously.
- * To carry out the fine tuning operation more slowly, depress the button repeatedly in succession. If you release the button for too long, the display will disappear. In that case, depress the button again.

When a program is clearly tuned in, release the button to stop the fine tuning operation.
* The display will disappear a few seconds later.

Notes on Station Search

The automatic search for stations which is carried out in order to preset the VS-303 with TV stations, proceeds through 3 scans indicated on the TV screen by B1 to B3. In this way, the VS-303 scans both VHF and UHF bands. After scanning through B3, the search continues beginning again with B-1.
The station search can be reversed or repeated over the same area by depressing the <▣> button.



```
STATION SEARCH
         PS A EMPTY
B-1 ..............X
```

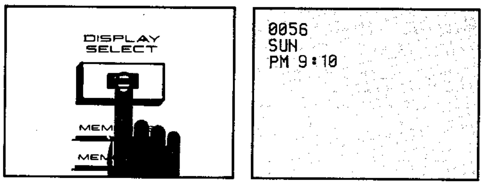
```
STATION SEARCH
         PS A EMPTY
B-3 ..............X
```

Convinent playback features of the VS-303

Using the DISPLAY SELECT button

During recording or playback, you can display 4 convenient pieces of information on your TV screen by repeatedly depressing the ▣ button.

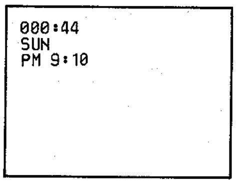
1 Tape counter/day of week and actual time


DISPLAY SELECT
MEM
MEM
0056
SUN
PM 9:10

NOTE:
To reset the tape counter to "0000", depress the ▣ button.

Note: The tape counter counts backwards during rewind and will indicate a negative(-) when it passes the counter reading of "0000". When a negative sign is showing, the counter will first count "down" to "0000", before again counting up.

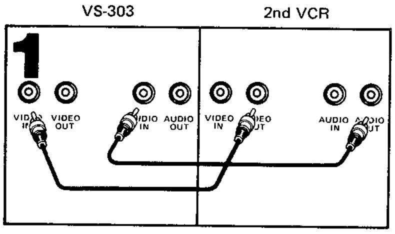
2 Elapsed time/day of week and actual time


000:44
SUN
PM 9:10

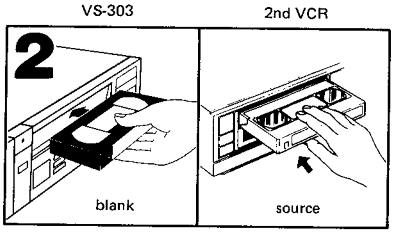
On the acurracy of the elapsed time counter.
Since the elapsed time counter does not function as a clock, there is some error in it's counting of time. The counter is intended only as a guide and not as an exact measurement of elapsed time.

External recording (Tape dubbing)

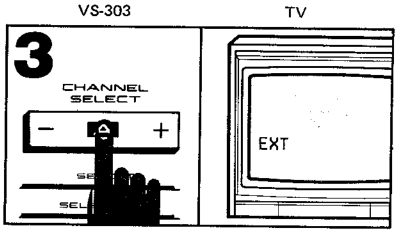
The VS-303 allows you to easily record from another VCR by use of the External mode (EXT) selected with the -▣+ button. With another VCR as the source, you can make a copy of any tape on the VS-303.


VS-303
2nd VCR
1
VIDEO IN
VIDEO OUT
AUDIO IN
AUDIO OUT
VIDEO IN
VIDEO OUT
AUDIO IN
AUDIO OUT

Connect a second VCR to the VS-303 as shown.


VS-303
2nd VCR
2
blank
source

Turn on both VCR's and the TV. Put the source tape in the other VCR, and a blank tape into the VS-303.

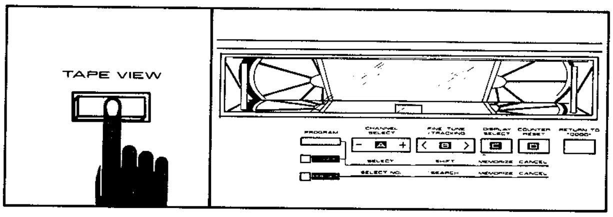

VS-303
TV
3
CHANNEL SELECT
-
+
EXT

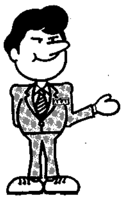
Depress the -▣+ button until EXT appears on the TV screen display. Then follow the recording instructions on page 21.

Note:
To use the VS-303 as the source deck, while recording on the 2nd VCR, connect the VIDEO OUT and AUDIO OUT of the VS-303 to the VIDEO IN and AUDIO IN of the 2nd VCR.

Tape View System

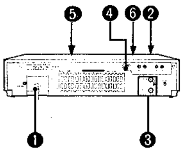
The Tape View System can be used for early detection of a problem with the tape or tape mechanism inside the VS-303, by allowing you to directly view the tape during any mode. In addition, the Tape View System stays lit when the VS-303 is in the STOP mode, to let you know a tape is already loaded. The system works automatically when you depress a tape transport button, or at any time by depressing the TAPE VIEW button.

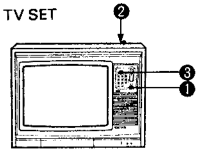


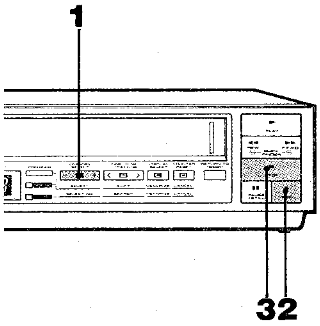


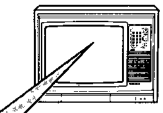
Let's record a TV program

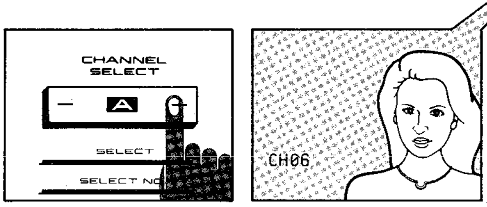
Check before starting

AKAI VS-303 	❶	Power cord is properly connected to the household AC outlet.
	❷	FUNCTION button is turned on.
	❸	All the components are properly connected.
	❹	Video mode selector is set properly.
	❺	A video cassette tape is loaded.
	❻	TV/VIDEO selector set to VIDEO.

TV SET 	❶	Turned on.
	❷	Properly connected.
	❸	Set to the video channel.



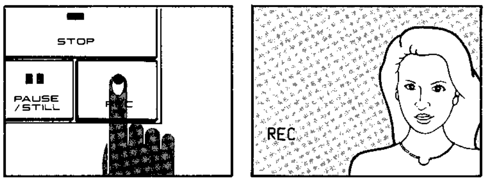




1

Depress the -▲+ button to select the preset channel number programmed with the TV station to be recorded.

* The program from the selected TV station will be displayed on your TV screen. At the same time, the selected preset channel number will be displayed on the TV screen for approximately 3 seconds.

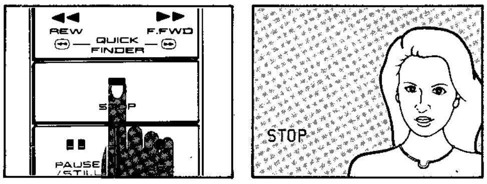


2

Depress the REC (●) button for at least one second to begin recording.

* "REC" will be displayed on your TV screen for approximately 3 seconds.

NOTE:
There is a 3 to 4 second delay before recording starts, while the tape moves into position. For instant recording starts, find the exact point where you wish to begin recording. Then depress the PAUSE button. Notice that the REC indicator begins flashing. When you are ready to begin recording, depress the REC button. Recording will begin immediately.



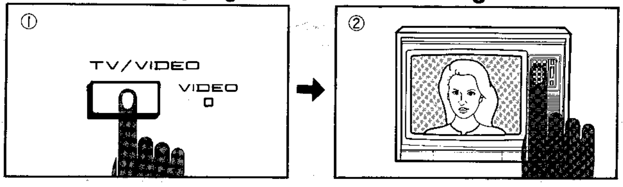
3

To stop recording depress the STOP (■) button.

* "STOP" will be displayed on your TV screen for approximately 3 seconds.

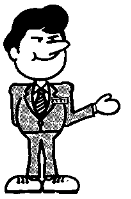
Note:
When using the REC and STOP buttons to record a program, there will be some overlap in the recorded image in order to prevent noise from appearing between cuts. However, if you want to be sure not to lose a few seconds of image between stops and starts, depress the PLAY button to forward the tape to the exact place where you left off, before recording the next portion of tape.

To watch one program while recording another



After following steps 1 and 2 of let's record,

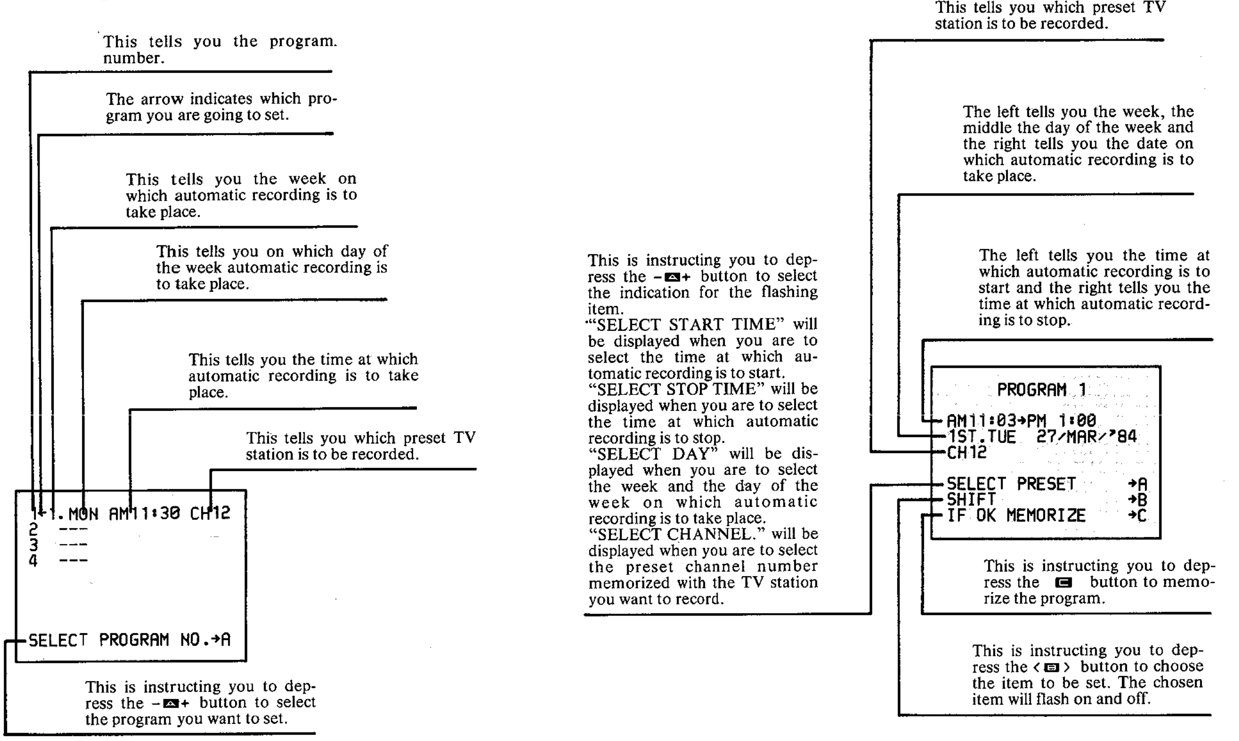
1. Set the VIDEO/TV selector to TV. (The VIDEO indicator goes off.)
2. Set the TV to the channel you want to watch with its channel selector.



Let's look at the programming display of the Akai VS-303

By programming the Akai VS-303, you can make it turn itself on, record a TV program and turn itself off, all automatically.
Up to 4 programs can be set in advance. You can freely choose the Time, Day, Week and TV station you wish to record and you can do it up to 4 weeks in advance.

On the programming display



This tells you the program. number.

The arrow indicates which program you are going to set.

This tells you the week on which automatic recording is to take place.

This tells you on which day of the week automatic recording is to take place.

This tells you the time at which automatic recording is to take place.

This tells you which preset TV station is to be recorded.

```
1←1.MON AM11:30 CH12
2  ---
3  ---
4  ---

SELECT PROGRAM NO.→A
```

This is instructing you to depress the -▲+ button to select the program you want to set.

This is instructing you to depress the -▲+ button to select the indication for the flashing item.
"SELECT START TIME" will be displayed when you are to select the time at which automatic recording is to start.
"SELECT STOP TIME" will be displayed when you are to select the time at which automatic recording is to stop.
"SELECT DAY" will be displayed when you are to select the week and the day of the week on which automatic recording is to take place.
"SELECT CHANNEL." will be displayed when you are to select the preset channel number memorized with the TV station you want to record.

This tells you which preset TV station is to be recorded.

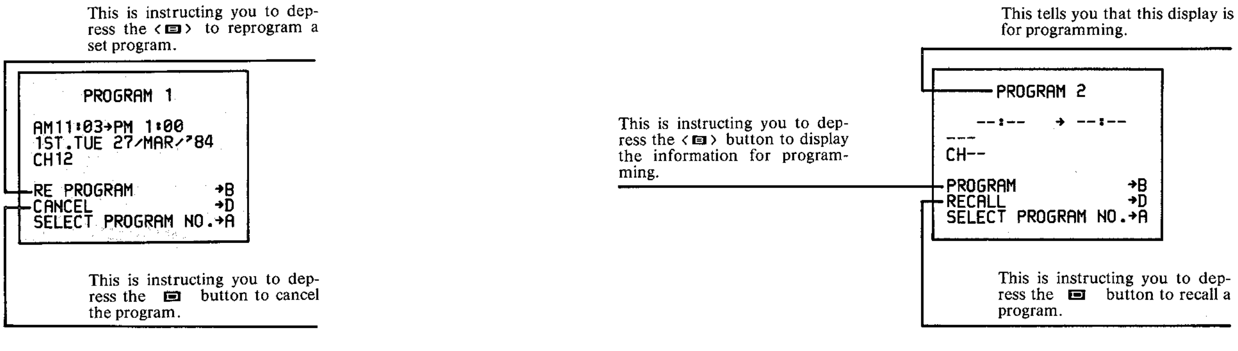
The left tells you the week, the middle the day of the week and the right tells you the date on which automatic recording is to take place.

The left tells you the time at which automatic recording is to start and the right tells you the time at which automatic recording is to stop.

```
     PROGRAM 1

AM11:03→PM 1:00
1ST.TUE  27/MAR/'84
CH12

SELECT PRESET       →A
SHIFT               →B
IF OK MEMORIZE      →C
```

This is instructing you to depress the ▭ button to memorize the program.

This is instructing you to depress the < ▭ > button to choose the item to be set. The chosen item will flash on and off.



This is instructing you to depress the < ▭ > to reprogram a set program.

```
     PROGRAM 1

AM11:03→PM 1:00
1ST.TUE 27/MAR/'84
CH12

RE PROGRAM          →B
CANCEL              →D
SELECT PROGRAM NO.→A
```

This is instructing you to depress the ▭ button to cancel the program.

This is instructing you to depress the < ▭ > button to display the information for programming.

This tells you that this display is for programming.

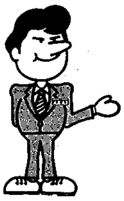
```
     PROGRAM 2

  --:--    →  --:--
---
CH--

PROGRAM             →B
RECALL              →D
SELECT PROGRAM NO.→A
```

This is instructing you to depress the ▭ button to recall a program.

Further recording notes:

- Recording can be stopped temporarily by depressing the PAUSE (❚❚) button.
  To prevent damage to the tape, do not remain in pause for more than 4 minutes.
  After 4 minutes the Akai VS-303 will automatically go into the STOP mode.
  To resume recording, depress the REC (●) button.
- To fast forward the tape, depress the F.FWD (►►) button.
  * "FF" will be displayed on the TV screen for approximately 3 seconds.
- To rewind the tape, depress the REW (◄◄) button.
  * "REW" will be displayed on the TV screen for approximately 3 seconds.
- To stop the tape, depress the STOP (■) button or depress the PLAY (►) button to begin playback.
- The tape is not played back during fast forward or rewind operation.
- If the REC (●) button will not function, check to see if the video cassette tape's recording defeat tab is broken. If it is, cover the hole with a piece of adhesive tape.
- Whenever the end of the tape is reached, the tape will automatically rewind to the beginning and stop.

* If you repeatedly depress the -▲+ button too quickly, the CH number shown on the TV screen might not correctly indicate the TV station selected. However, the CH number shown on the CHANNEL (CH) display on the front of the VS-303 will correctly show the CH number.
Do not touch the -▲+ button during recording as this will cause the CH number to change.



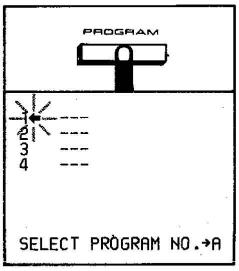
How to program the Akai VS-303 for automatic recording

Are you ready?
LET'S START

As an example, we will set the program shown in step 18 below.

1

Depress the PROGRAM button to display the information for programming on your TV screen.

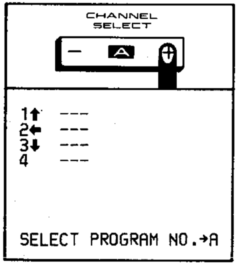


```
1←---
2 ---
3 ---
4 ---

SELECT PROGRAM NO.→A
```

2 PROGRAM NO.

To follow the instruction "SELECT PROGRAM NO. → A", hold the -A+ button depressed until the arrow points to the program number you want to set.

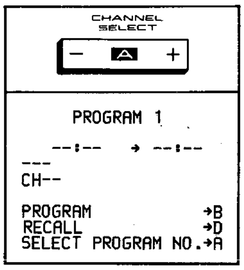
* To set program 1, depress the -A+ button just once.


CHANNEL SELECT
- A +

```
1↑ ---
2← ---
3↓ ---
4  ---

SELECT PROGRAM NO.→A
```

3

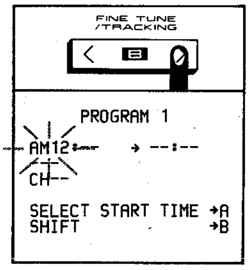
This information will be displayed when the -A+ button is released.


CHANNEL SELECT
- A +

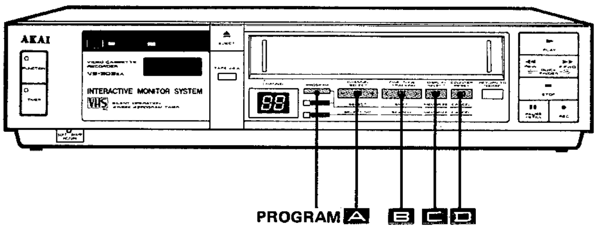
```
        PROGRAM 1
   --:--   →  --:--
---
CH--

PROGRAM             →B
RECALL              →D
SELECT PROGRAM NO.→A
```

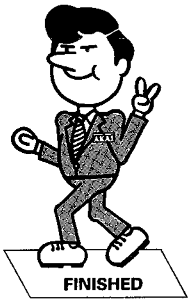
4

To follow the instruction "PROGRAM → B", depress the ‹B› button to start programming.


FINE TUNE /TRACKING
< B

```
        PROGRAM 1
 AM12:--   →  --:--
 CH--

SELECT START TIME →A
SHIFT              →B
```


AKAI
INTERACTIVE MONITOR SYSTEM
VHS
PROGRAM A B C D

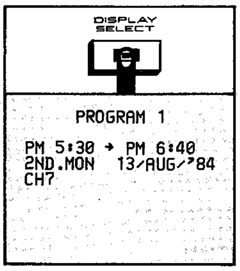


18 MEMORIZE

Programming is now finished.

To follow the instruction "IF OK, MEMORIZE → C", depress the C button to memorize the program.

To reset or cancel a memorized program, refer to page 26 or 27.

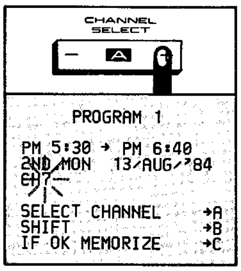

DISPLAY SELECT
C

```
      PROGRAM 1
PM 5:30 → PM 6:40
2ND.MON  13/AUG/'84
CH7
```

17

To follow the instruction "SELECT CHANNEL → A", depress the -A+ button to select the preset channel number, or EXT*. Two numbers may be set.

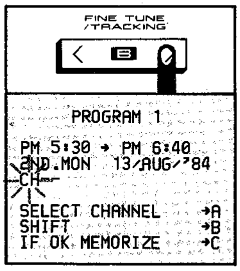
* See p. 20.


CHANNEL SELECT
- A

```
      PROGRAM 1
PM 5:30 → PM 6:40
2ND.MON  13/AUG/'84
CH7

SELECT CHANNEL    →A
SHIFT             →B
IF OK MEMORIZE    →C
```

16

To follow the instruction "SHIFT → B", depress the ‹B› button to shift to the next item to be set: preset channel (CH) number memorized with the TV station to be recorded.

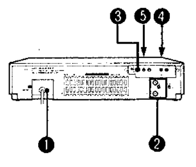

FINE TUNE /TRACKING
< B

```
      PROGRAM 1
PM 5:30 → PM 6:40
2ND.MON  13/AUG/'84
CH--

SELECT CHANNEL    →A
SHIFT             →B
IF OK MEMORIZE    →C
```

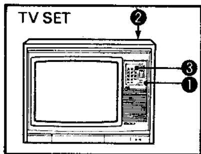
NOTE

- If you want to remove the programming display from your TV screen, depress the PROGRAM button again.

Check before starting



❶	Power cord is properly connected to the household AC outlet.
❷	All the components are properly connected.
❸	Video mode selector is set properly.
❹	FUNCTION button is turned on.
❺	TV/VIDEO selector set to VIDEO.

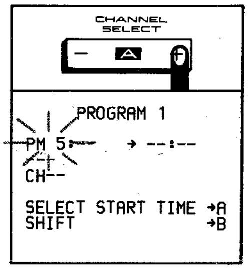


❶	Turned on.
❷	Properly connected.
❸	Set to the video channel.

5 START TIME HOURS

To follow the instruction "SELECT START TIME → A", depress the -A+ button to select the turn on hours.

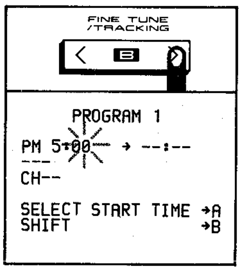
1, 2, ... AM or PM



```
PROGRAM 1
PM 5:--    → --:--
CH--

SELECT START TIME →A
SHIFT             →B
```

6

To follow the instruction "SHIFT → B", depress the <B> button to shift to the next item to be set: start time minutes.

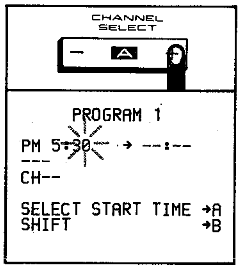


```
PROGRAM 1
PM 5:00    → --:--
---
CH--

SELECT START TIME →A
SHIFT             →B
```

7 START TIME MINUTES

To follow the instruction "SELECT START TIME → A", depress the -A+ button to select the start time minutes.

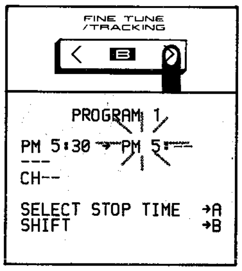
01, 02, 03, . . . up to 59



```
PROGRAM 1
PM 5:30    → --:--
---
CH--

SELECT START TIME →A
SHIFT             →B
```

8

To follow the instruction "SHIFT → B", depress the <B> button to shift to the next item to be set: stop time hours.

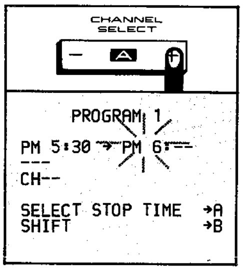


```
PROGRAM 1
PM 5:30 → PM 5:--
---
CH--

SELECT STOP TIME  →A
SHIFT             →B
```

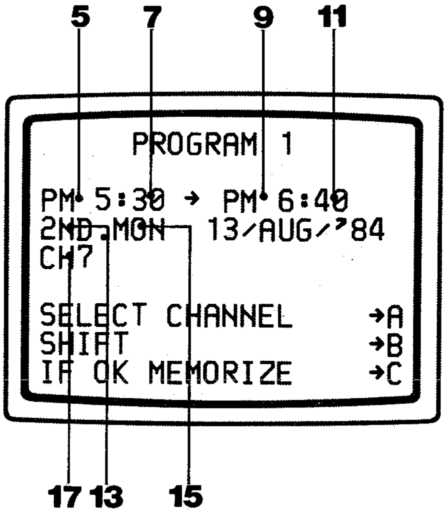
9 STOP TIME HOURS

To follow the instruction "SELECT STOP TIME → A", depress the -A+ button to select the turn off hours.

1, 2, ... AM or PM



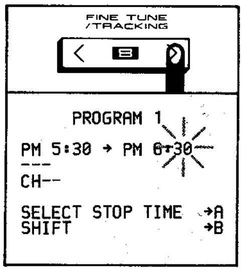
```
PROGRAM 1
PM 5:30 → PM 6:--
---
CH--

SELECT STOP TIME  →A
SHIFT             →B
```



```
PROGRAM 1
PM 5:30 → PM 6:40
2ND MON  13/AUG/'84
CH7

SELECT CHANNEL    →A
SHIFT             →B
IF OK MEMORIZE    →C
```

10

To follow the instruction "SHIFT → B", depress the <B> button to shift to the next item to be set: stop time minutes.

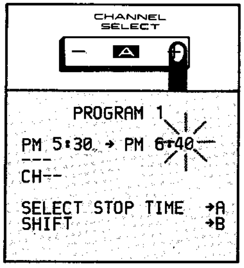


```
PROGRAM 1
PM 5:30 → PM 6:30
---
CH--

SELECT STOP TIME  →A
SHIFT             →B
```

11 STOP TIME MINUTES

To follow the instruction "SELECT STOP TIME → A", depress the -A+ button to select the stop time minutes.

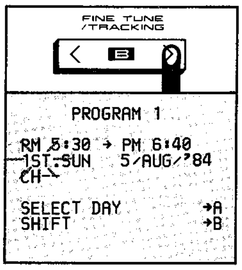
01, 02, 03, . . . up to 59



```
PROGRAM 1
PM 5:30 → PM 6:40
---
CH--

SELECT STOP TIME  →A
SHIFT             →B
```

12

To follow the instruction "SHIFT → B", depress the <B> button to shift to the next item to be set: week.



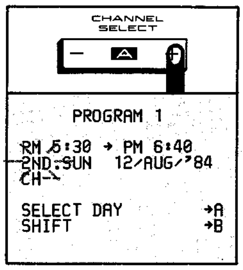
```
PROGRAM 1
PM 5:30 → PM 6:40
1ST:SUN   5/AUG/'84
CH--

SELECT DAY        →A
SHIFT             →B
```

13 WEEK

To follow the instruction depress the -A+ button to select the week.

1ST, 2ND, 3RD, 4TH, or MON TO FRI:*

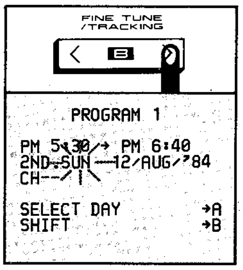
* For explanation, See p.28.



```
PROGRAM 1
PM 5:30 → PM 6:40
2ND:SUN  12/AUG/'84
CH--

SELECT DAY        →A
SHIFT             →B
```

14

To follow the instruction "SHIFT → B", depress the <B> button to shift to the next item to be set: day of the week.



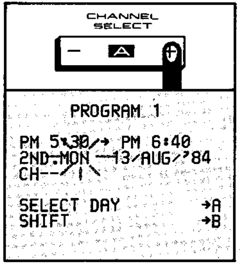
```
PROGRAM 1
PM 5:30 → PM 6:40
2ND:SUN  12/AUG/'84
CH--

SELECT DAY        →A
SHIFT             →B
```

15 DAY OF WEEK

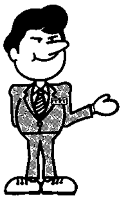
To follow the instruction "SELECT DAY → A", depress the -A+ button to select the day.

- * When the day of the week is set, the corresponding date will be displayed.

SUN, MON, TUE, WED, THU, FRI, or SAT

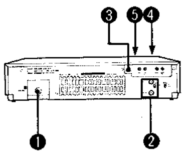


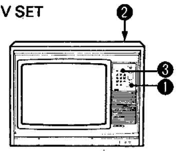
```
PROGRAM 1
PM 5:30 → PM 6:40
2ND:MON  13/AUG/'84
CH--

SELECT DAY        →A
SHIFT             →B
```

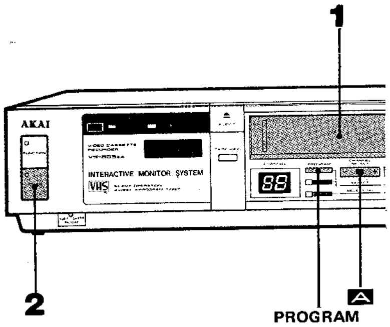


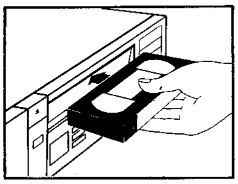
Let's proceed with automatic recording

Check before starting

AKAI VS-303		
	❶	Power cord is properly connected to the household AC outlet.
	❷	All the components are properly connected.
	❸	Video mode selector is set properly.
	❹	FUNCTION button is turned on.
	❺	TV/VIDEO selector set to VIDEO.

TV SET		
	❶	Turned on.
	❷	Properly connected.
	❸	Set to video channel.



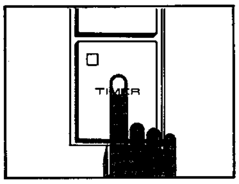


1

Insert a video cassette tape.

* Confirm that the recording defeat tab is not broken. If it is, cover the hole with a piece of adhesive tape.

NOTE:
Make sure that the video cassette tape is long enough for the duration of automatic recording.



2

Depress the TIMER button to make the Akai VS-303 standby for automatic recording.

* Confirm that its indicator is on.

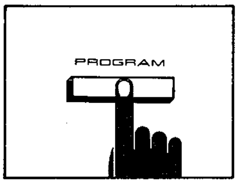
NOTE:
You can watch a TV program during automatic recording by setting the TV itself to the channel you want to watch.

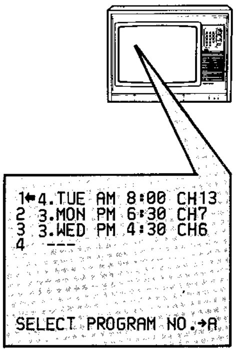
* Turn off the TV if you are not going to watch a program.

The Akai VS-303 will turn on 6 seconds before the programmed turn on time. One second later, it will automatically start recording and at the programmed turn off time, it will stop recording and turn itself off.

If you want to confirm a program

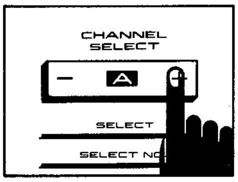
Depress the PROGRAM button.

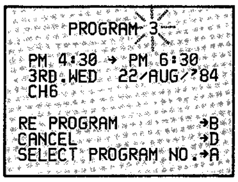




```
1←4.TUE AM 8:00 CH13
2 3.MON PM 6:30 CH7
3 3.WED PM 4:30 CH6
4 ---

SELECT PROGRAM NO.→A
```

The week, day of the week, start time and preset channel number of each program will be displayed. " - - - " indicates that the program is not set, was cancelled or automatic recording was carried out.





```
    PROGRAM 3
 PM 4:30 → PM 6:30
 3RD.WED  22/AUG/'84
 CH6

RE PROGRAM         →B
CANCEL             →D
SELECT PROGRAM NO.→A
```

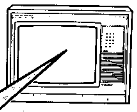
To confirm a program in more details, follow the instruction "SELECT PROGRAM NO. → A": hold the -▣+ button depressed until the arrow points to the program you want to confirm. To confirm other programs, follow the instruction "SELECT PROGRAM NO. → A", and depress the -▣+ button.

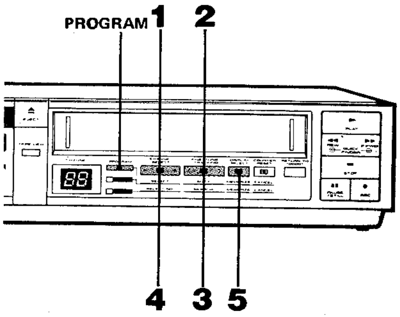
The complete program information will be displayed.
" - - : - - " indicates that the program is not set, was cancelled or automatic recording was carried out.

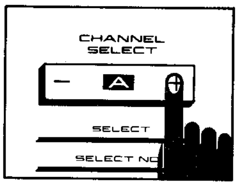
To remove the information from the screen, depress the PROGRAM button.

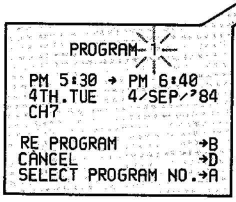
To reset a program after it has been memorized

Depress the PROGRAM button.




PROGRAM
1
2
4
3
5

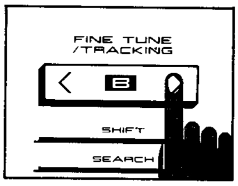

CHANNEL SELECT
A
SELECT
SELECT NO

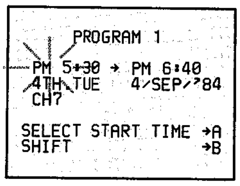


```
PROGRAM 1
PM 5:30 → PM 6:40
4TH.TUE   4/SEP/'84
CH7

RE PROGRAM          →B
CANCEL              →D
SELECT PROGRAM NO.→A
```

1

To follow the instruction "SELECT PROGRAM NO. → A", depress the -A+ button until the arrow points to the program you want to reset.

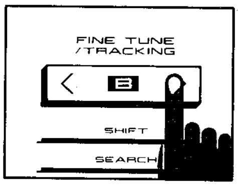

FINE TUNE /TRACKING
B
SHIFT
SEARCH

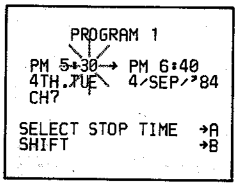


```
PROGRAM 1
PM 5:30 → PM 6:40
4TH.TUE   4/SEP/'84
CH7

SELECT START TIME →A
SHIFT             →B
```

2

To follow the instruction "REPROGRAM → B", depress the > side of the <B> button.

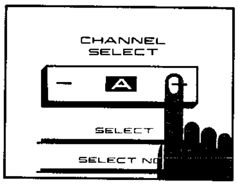

FINE TUNE /TRACKING
B
SHIFT
SEARCH

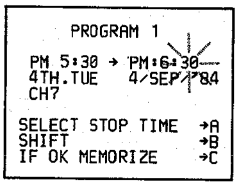


```
PROGRAM 1
PM 5:30 → PM 6:40
4TH.TUE   4/SEP/'84
CH7

SELECT STOP TIME  →A
SHIFT             →B
```

3

To follow the instruction "SHIFT → B", depress the <B> button until the item you want to reset flashes on and off.

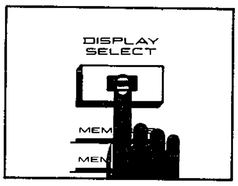

CHANNEL SELECT
A
SELECT
SELECT NO

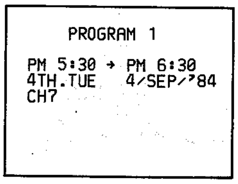


```
PROGRAM 1
PM 5:30 → PM 6:30
4TH.TUE   4/SEP/'84
CH7

SELECT STOP TIME  →A
SHIFT             →B
IF OK MEMORIZE    →C
```

4

Then to follow the instruction "SELECT START TIME/ STOP TIME/ DAY/ PS NO. → A", depress the -A+ button and reset the item. Reset other items in the same manner. After you have reset all the items, go to the next step.


DISPLAY SELECT
C
MEM
MEN

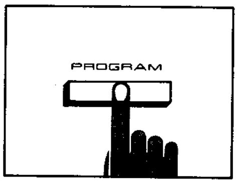


```
PROGRAM 1
PM 5:30 → PM 6:30
4TH.TUE   4/SEP/'84
CH7
```

5

To follow the instruction "IF OK, MEMORIZE → C", depress the C button.

NOTE:
During programming, any item can be reset by using the <B> and -A+ buttons in the same manner.

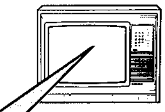


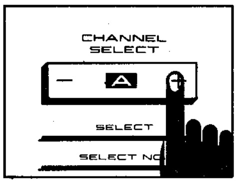
6

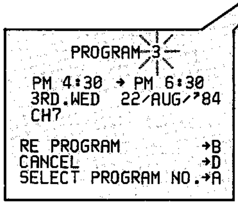
To remove the information from the screen, depress the PROGRAM button.

To cancel a program after it has been memorized

Depress the PROGRAM button.



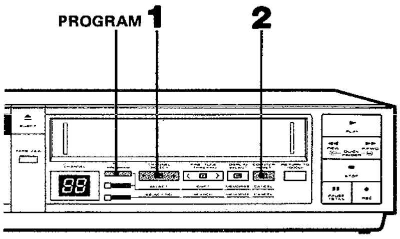


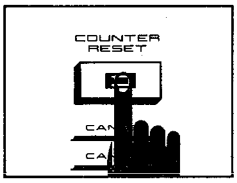


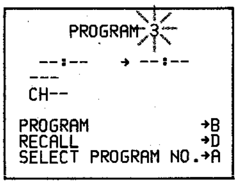
```
PROGRAM 3
PM 4:30 → PM 6:30
3RD.WED   22/AUG/'84
CH7

RE PROGRAM          →B
CANCEL              →D
SELECT PROGRAM NO.→A
```

1

To follow the instruction "SELECT PROGRAM NO. → A", depress the -▲+ button until the arrow points to the program you want to cancel.







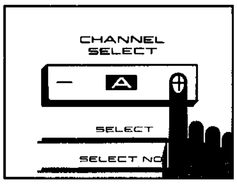
```
PROGRAM 3
--:--   → --:--
---
CH--

PROGRAM             →B
RECALL              →D
SELECT PROGRAM NO.→A
```

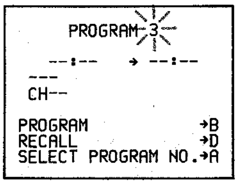
2

To follow the instruction "CANCEL → D", depress the ▣ button to cancel the program. To reprogram repeat the programming procedure from step 2, Page 23.

If you want to recall a finished or cancelled program

Depress the PROGRAM button.

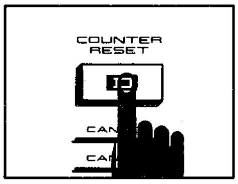


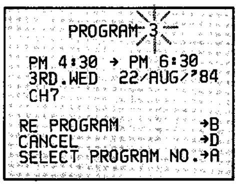


```
PROGRAM 3
--:--   → --:--
---
CH--

PROGRAM             →B
RECALL              →D
SELECT PROGRAM NO.→A
```

1

Use the -▲+ button to select the program number.
When an automatic recording has been carried out according to a program "— —" will be displayed beside its program number when the PROGRAM button is depressed. To recall the program so that automatic recording can be again carried out according to the program's instructions:

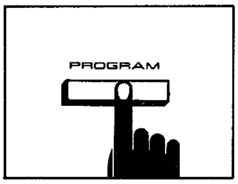




```
PROGRAM 3
PM 4:30 → PM 6:30
3RD.WED   22/AUG/'84
CH7

RE PROGRAM          →B
CANCEL              →D
SELECT PROGRAM NO.→A
```

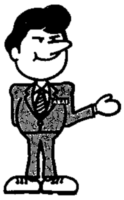
2

To follow the instruction "RECALL → D", depress the ▣ button to recall the program.
Same thing applies for canceled programs.



3

To remove the information from the screen, depress PROGRAM button.



An example of 4-week timer setting

August						
SUN	MON	TUE	WED	THE	FRI	SAT
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			
September						
				1	2	3
4	5	6	7	8	9	10

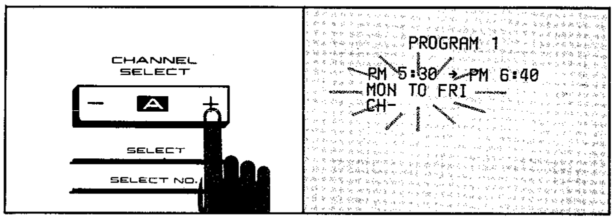
"4-week" pre-setting means that you can "reserve" recording time on any one of 28 days in advance-including the day of setting. This means that beginning with today, you can pre-program your Akai VS-303 to automatically record at any time on any day for 28 days.

For example, let's say that today is Monday AUG. 1st and you wish to preset a recording time for later on tonight. Then set the week and day for "1st Monday" which will mean today (AUG. 1st). So now it follows that if you want to pre-set time for next Monday (AUG. 8th), you will set the week and day for "2nd Monday" and so on for "3rd Monday" (AUG. 15th) and "4th Monday" (AUG. 22nd). The same thing applies to the other days of the week.

Now let's say its Tuesday AUG. 2nd at 9:00 PM and you want to pre-set recording time for 8:00 PM the following Tuesday (AUG. 9th). Since it is already past 8:00 PM today (AUG. 2nd) when you are doing the setting, you must set the week and day for "1st Tuesday" since the 1st Tuesday you can record at 8:00 PM is now next week (AUG. 9th). In other words, "1st Tuesday" means the first Tuesday you can record at the time desired. The same thing applies to the other days of the week.

Everyday recording

You can automatically record a program at the same time everyday. After setting the START and STOP TIME following the directions on pages 23 and 24, keep depressing the -A+ button when the WEEK indicator is flashing. Set the WEEK indicator to MON TO FRI and continue programming the remaining information.
The VS-303 will now carry out this program everyday at the same time provided that a tape is loaded and the TIMER button is on.



PROGRAM LIST

Program No.	Channel	TV program	Date	Start time	Stop time	Memo
1						
2						
3						
4						

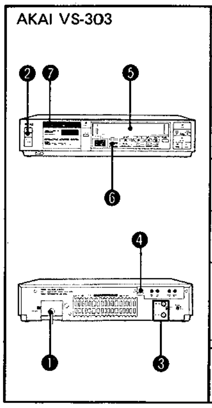
Important

PROGRAM PRIORITY

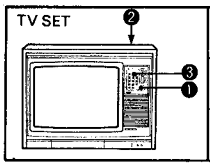
- If two programs are set to turn on at the same day and time the smaller program number has priority.
- If two programs overlap, the earlier program will be interrupted by the latter one.

Let's make your Akai VS-303 stop recording and turn

Check before starting



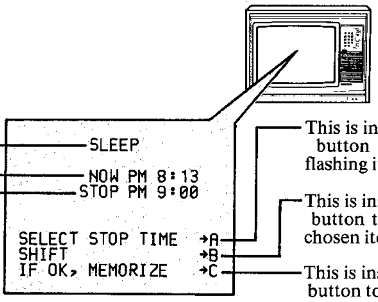
❶	Power cord is properly connected to the household AC out.
❷	FUNCTION button is turned on.
❸	All the components are properly connected.
❹	Video mode selector is set properly.
❺	A video cassette tape is loaded.
❻	Select the preset channel number programmed with the TV station you want to record by depressing the -▣+ button.
❼	TV/VIDEO selector set to VIDEO.



❶	Turned on.
❷	Properly connected.
❸	Set to the video channel.

The Akai VS-303 can be set to stop recording and turn itself off automatically when you have to leave before the program you are recording is finished. We call this turn off time "SLEEP TIME".

On the Sleep time display



```
SLEEP
NOW PM 8:13
STOP PM 9:00

SELECT STOP TIME  →A
SHIFT             →B
IF OK, MEMORIZE   →C
```

This tells you that the display is for sleep time.

This tells you the actual time.

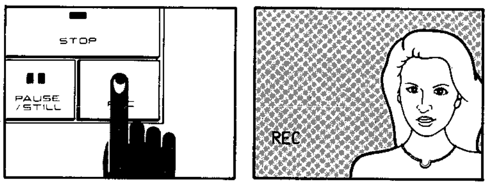
This tells you the time at which the Akai VS-303 is to turn itself off (i.e. sleep time).

This is instructing you to depress the -▣+ button to select the indication for the flashing item.

This is instructing you to depress the <▣> button to choose the item to be set. The chosen item will flash on and off.

This is instructing you to depress the ▣ button to memorize the sleep time.

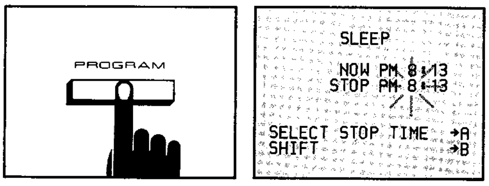
How to set sleep time



1

Depress the REC (●) button for at least 1 second to record a TV program.

* "REC" will be displayed on your TV screen for 3 seconds.

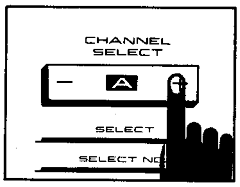


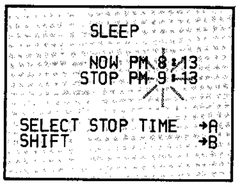
```
SLEEP
NOW PM 8:13
STOP PM 8:13

SELECT STOP TIME →A
SHIFT            →B
```

2

Depress the PROGRAM button to display the information for setting the sleep time on your TV screen.

itself off automatically at a programmed time

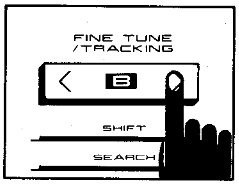


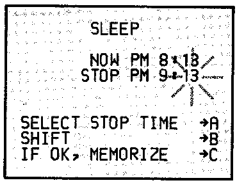


```
SLEEP
NOW PM 8:13
STOP PM 9:13

SELECT STOP TIME →A
SHIFT            →B
```

3 STOP TIME HOURS

To follow the instruction "SELECT STOP TIME → A", depress the –A+ button to select the stop time hours.

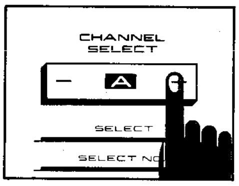


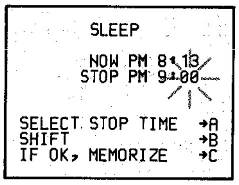


```
SLEEP
NOW PM 8:13
STOP PM 9:13

SELECT STOP TIME →A
SHIFT            →B
IF OK, MEMORIZE  →C
```

4

To follow the instruction "SHIFT → B", depress the <B> button to shift to the next item to be set: stop time minutes.

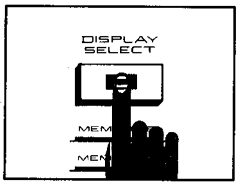


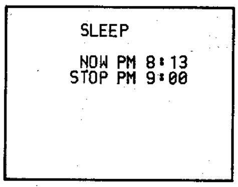


```
SLEEP
NOW PM 8:13
STOP PM 9:00

SELECT STOP TIME →A
SHIFT            →B
IF OK, MEMORIZE  →C
```

5 STOP TIME MINUTES

To follow the instruction "SELECT STOP TIME → A", depress the –A+ button to select the stop time minutes.

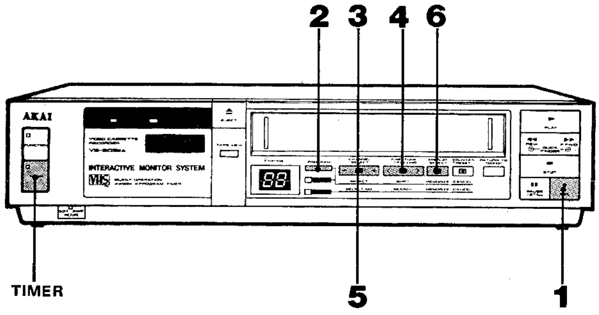




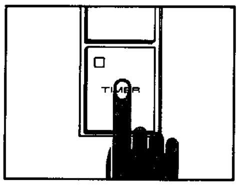
```
SLEEP
NOW PM 8:13
STOP PM 9:00
```

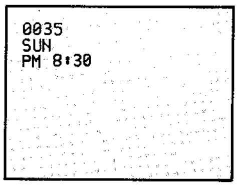
6 MEMORIZE

The procedure is now finished.
To follow the instruction "IF OK, MEMORIZE → C", depress the ▣ button to memorize the sleep time.
Once this operation has been completed, all the buttons will become inoperative.
* Don't forget to turn off the TV.
The Akai VS-303 will stop recording and turn itself off at the programmed sleep time.
After sleep time operation, depress the FUNCTION button to operate the Akai VS-303 again.



To cancel sleep time operation during sleep time recording



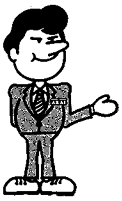


```
0035
SUN
PM 8:30
```

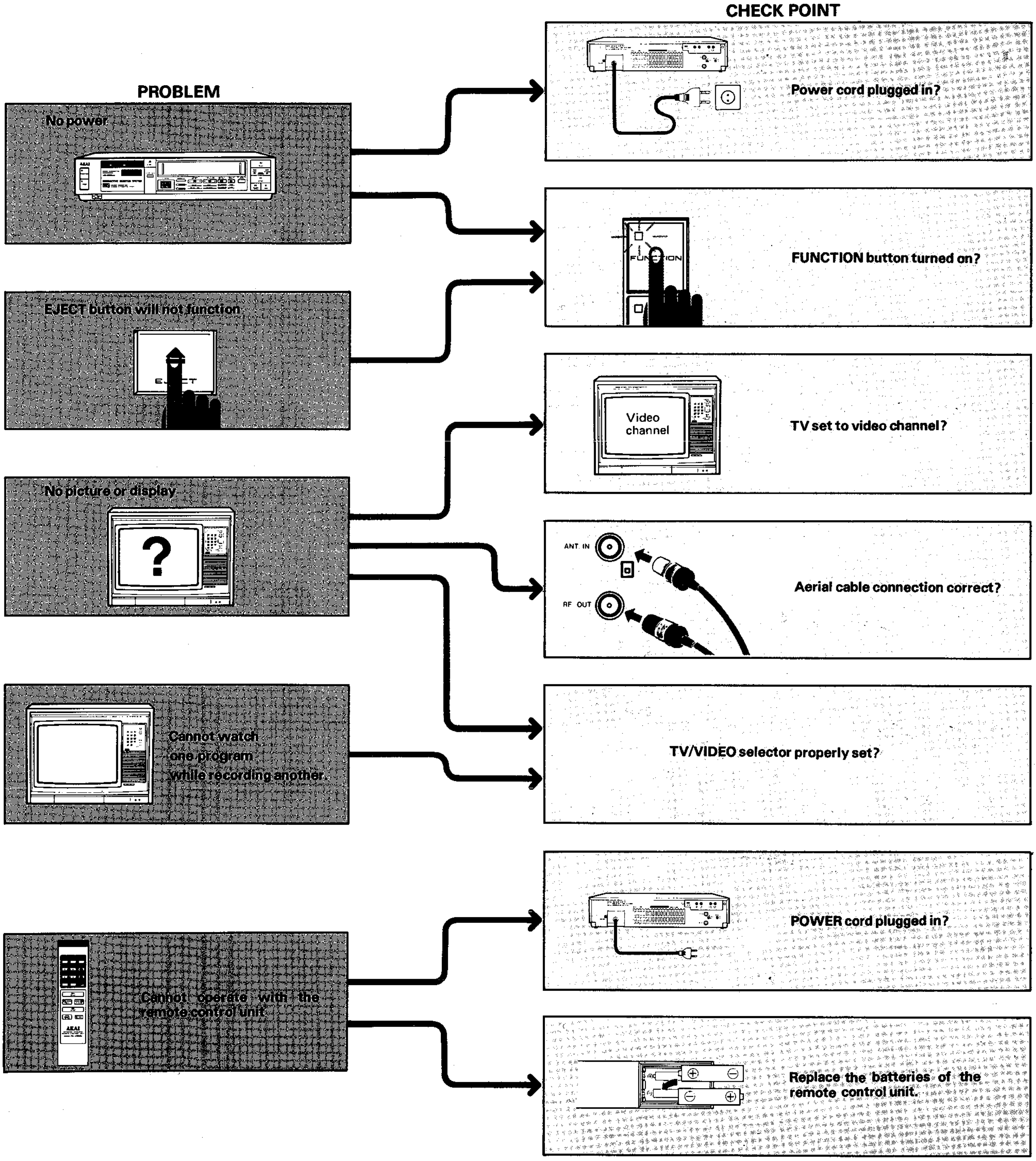
Depress the TIMER button. The sleep time operation will be canceled the Akai VS-303 goes into normal recording mode.

NOTES

- If the tape ends before the programmed sleep time, the Akai VS-303 will turn itself off and sleep time operation will be canceled. Therefore, make sure that the length of the tape is longer than the sleep time.
- If a sleep timer setting and a preprogrammed recording setting overlap, the preprogrammed recording will not be carried out. In other words, the sleep time program will continue until finished, but the preprogrammed recording setting will be canceled.
- If a program is set for recording in the VS-303's memory, when the sleep time program is finished, the VS-303 will automatically set itself to TIMER. If the preset program is too far in the future, depress the TIMER button again to turn it off.

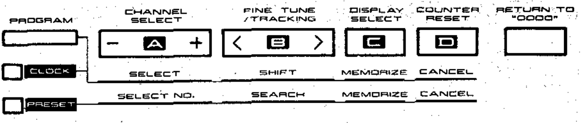


Problem? Let's check


CHECK POINT
PROBLEM
No power
AKAI
Power cord plugged in?
FUNCTION
FUNCTION button turned on?
EJECT button will not function
EJECT
Video channel
TV set to video channel?
No picture or display
?
ANT IN
RF OUT
Aerial cable connection correct?
Cannot watch one program while recording another.
TV/VIDEO selector properly set?
POWER cord plugged in?
Cannot operate with the remote control unit.
AKAI
Replace the batteries of the remote control unit.

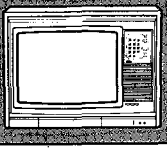
CHECK POINT

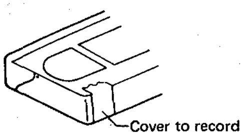
Refer to pages 23-26 and 29-30 for correct programming procedure.


PROGRAM
CHANNEL SELECT
– A +
FINE TUNE /TRACKING
< B >
DISPLAY SELECT
C
COUNTER RESET
D
RETURN TO "0000"
CLOCK
SELECT
SHIFT
MEMORIZE
CANCEL
PRESET
SELECT NO.
SEARCH
MEMORIZE
CANCEL

PROBLEM

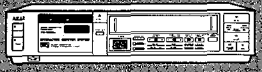
Automatic recording or sleep time operation will not take place.

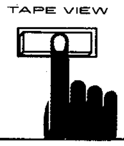



Cover to record

Recording defeat tab is broken. Cover the opening with tape to record.

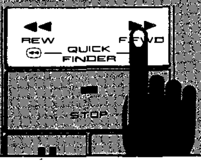
No recording

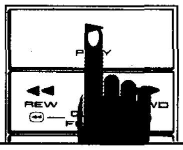




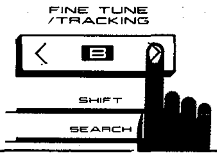
Tape loaded?

Quick finder will not function


REW
FFWD
QUICK FINDER
STOP

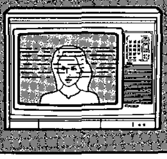


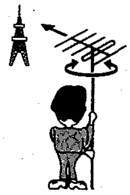
Is the VS-303 in playback mode?


FINE TUNE /TRACKING
< B >
SHIFT
SEARCH

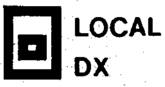
TRACKING

Disturbances in playback picture





Antenna movement or lose connections?

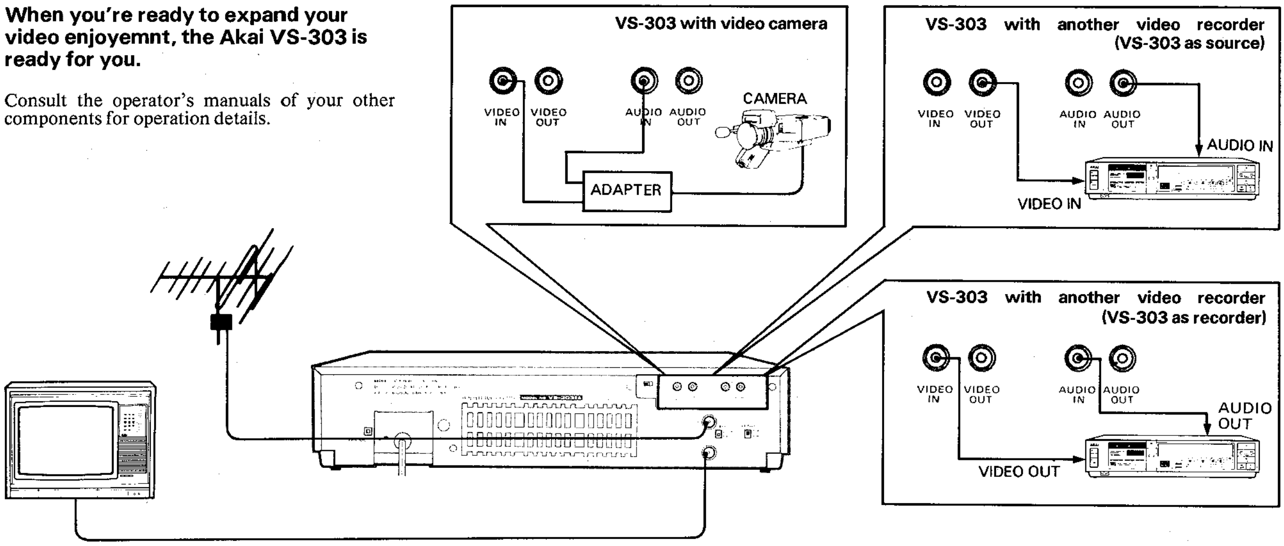


Broadcast signal is too strong. Move the rear panel attenuator switch to the LOCAL position.

Expanding your home video center

When you're ready to expand your video enjoyemnt, the Akai VS-303 is ready for you.

Consult the operator's manuals of your other components for operation details.


VS-303 with video camera
VIDEO IN
VIDEO OUT
AUDIO IN
AUDIO OUT
CAMERA
ADAPTER
VS-303 with another video recorder (VS-303 as source)
VIDEO IN
VIDEO OUT
AUDIO IN
AUDIO OUT
AUDIO IN
VIDEO IN
VS-303 with another video recorder (VS-303 as recorder)
VIDEO IN
VIDEO OUT
AUDIO IN
AUDIO OUT
AUDIO OUT
VIDEO OUT

Final notes

Memory back up

There is a rechargeable battery inside the Akai VS-303 for the station, program, and clock memories. The memories are retained even during a power failure. The memory back-up battery is recharged as long as the power cord is plugged in. It takes about 2 days to fully charge the battery which will then supply power for about seven days.

When the power is cut off for seven days or more, confirm the actual time, the preset channels and the programs. If the indications are wrong or if error is indicated, reset all the preset information again, starting with the actual time.

Tuning

When the Akai VS-303 is receiving certain test patterns such as the Philips type, there may be some distortion in the Interactive Monitor System characters on the TV screen.
This is not a malfunction of the Akai VS-303 and will not occur during reception of normal TV programs.

Maintenance

When a dirty tape is used, dirt will accumulate on the video heads. This will cause disturbances on the TV screen which cannot be eliminated with the Akai VS-303's tracking or the TV's fine tuning control. If this should occur, the heads as well as other internal parts must be cleaned. As this equipment is a finely precisioned instrument, never open it yourself. Take it to a qualified service shop or to an authorized Akai Service Station to be cleaned.
* Akai does not recommend the use of head cleaning tape.

Should a problem persist, write down the model and serial numbers and all pertinent data regarding warranty coverage as well as a clear description of the existing trouble. Then, contact your nearest authorized Akai Service Station or the Service Department of Akai Electric Company, Tokyo, Japan.

SECTION 2

SERVICE MANUAL

TABLE OF CONTENTS

I. SPECIFICATIONS 36
II. MANUAL RESETTING OF MICRO-COMPUTERS 37
III. DISMANTLING OF UNIT 38
IV. CONTROLS 39
V. PRINCIPAL PARTS LOCATION 40
VI. MECHANICAL ADJUSTMENT 44
  6-1 BEFORE THE ADJUSTMENT 44
  6-2 CONFIRMATION OF REGULATOR OUTPUT 45
  6-3 TAKE UP REEL TORQUE ADJUSTMENT 45
  6-4 BACK TENSION ADJUSTMENT 45
  6-5 LOADING LEADER HEIGHT ADJUSTMENT 46
  6-6 TAPE CURL AT TAPE GUIDE ADJUSTMENT 47
  6-7 AUDIO HEAD AZIMUTH ADJUSTMENT 47
  6-8 RF ENVELOPE ADJUSTMENT 48
  6-9 TAPE CURL AT TAPE GUIDE/IMPEDANCE GUIDE 48
  6-10 AUDIO HEAD HEIGHT ADJUSTMENT 48
  6-11 CONTROL HEAD POSITION ADJUSTMENT 48
  6-12 CUE/REVIEW ADJUSTMENT 48
VII. HEAD DRUM REPLACEMENT 49
  7-1 REPLACEMENT PROCEDURE 49
  7-2 AFTER REPLACEMENT 49
VIII. ELECTRICAL ADJUSTMENT 50
  8-1 SERVO ADJUSTMENT 50
  8-2 VIDEO ADJUSTMENT 54
  8-3 IMS (Interactive Monitor System) ADJUSTMENT 59
  8-4 AUDIO ADJUSTMENT 60
IX. DC RESISTANCE OF VARIOUS COILS 61
X. PC BOARD TITLES AND IDENTIFICATION NUMBERS 62

For operating principles, refer to TECHNICAL HAND BOOK (VIDEO 1).

I. SPECIFICATIONS

VS-303 EA/EG/EV-M/EO/ES/EZ

Format		VHS standard
Video Recording System		Rotary, slant azimuth two-head hericalscan system
Rotary Heads		2 video heads
RF Input	(EA)	System B, G VHF ch 0 to 5, 5A, 6 to 11 UHF ch 21 to 69
	(EG)	System B, G VHF ch 2 to 12 UHF ch 21 to 69
	(EV-M)	System B, G VHF ch 2 to 12 UHF ch 21 to 69
	(EO)	System B, G VHF low ch 2 to 4, S1 to S3; high ch M1 to M10, 5 to 12, U1 to U10 UHF ch 21 to 69
	(ES)	System I VHF ch 4 to 13 UHF ch 21 to 69
	(EZ)	System B, G VHF ch 1 to 10 UHF ch 21 to 69
RF Output	(EA)	System B type modulation VHF ch 0, 1 switchable (preset ch 1)
	(EG)	System G type modulation UHF ch 30 to 39 adjustable (preset ch 36)
	(EV-M)	System B type modulation VHF ch 3, 4 switchable (preset ch 4)
	(EO)	System G type modulation UHF ch 30 to 39 adjustable (preset ch 36)
	(ES)	System I type modulation UHF ch 30 to 39 adjustable (preset ch 36)
	(EZ)	System B type modulation VHF ch 2, 3 switchable (preset ch 3)
Recording (Line Input)		PAL, CCIR (System B, G, I)
Playback (Line Output)		PAL, CCIR (System B, G, I)
Video	Line Input Level	0.5 to 2.0 Vp-p/75 ohms, unbalanced
	Line Output Level	1.0 Vp-p/75 ohms, unbalanced
	S/N Ratio	more than 43 dB
	Horizontal Resolution	more than 250 lines
Audio	Line Input Level	–8 dBm/50 k ohms, unbalanced
	Line Output Level	–6 dBm/ 1 k ohms, unbalanced
	S/N Ratio	More than 40 dB
	Frequency Response	100 to 10,000 Hz
Recording/Playback Time		240 min. with E-240 cassette
Tape Speed		23.39 mm/sec.
Quick Finder		approx. 7 times normal speed (noise bars fixed)
FF, REW Time		approx. 4 min. with E-180 cassette
Timer	Programs	4 program/4 week and sleep timer
	Clock Reference	Quartz crystal
Display		TV screen (Tape counter, Timer etc.)
Power Requirements	(EA)	240V AC 50 Hz
	(EG)	110V/220V AC 50 Hz/60 Hz
	(EV-M)	115V/230V AC 50 Hz/60 Hz
	(EO)	220V AC 50 Hz
	(ES)	220V/250V AC 50 Hz
	(EZ)	230V AC 50 Hz
Power Consumption		33 W
Operating Temperature		5°C to 40°C
Dimensions		440 (W) x 99 (H) x 368 (D) mm (17.3 x 3.9 x 14.5 inches)
Weight		8.0 kg (17.6 lbs)

RC-V603 A/B (Remote control unit)

System	Infrared pulse position modulaion system
Carrier Requency	38 kHz ± 0.2 kHz
Range	more than 8 meters
Directivity	±30° (at 4 meters)
Batteries	R6 (or AA, SUM-3) x 2 (3 volts)
Dimensions	42 (W) x 20 (H) x 165 (D) mm
Weight	60 g (without batteries)

II. MANUAL RESETTING OF MICRO-COMPUTERS

If the memory in a micro-computer is disturbed, the micro computer might malfunction.
If this happens, set the memory in the Micro-computer manually (to clear the internal memory of the micro-computer), then the micro computer will resume its correct functions.

1) Pull out the AC power cord from the wall socket (or some other power source).
2) Keep the REW button and the Stop button on the front panel pressed.
3) Plug the AC power cord into the wall socket (or some other power source) and release the REW button and the stop button.

This model is equipped with three micro-computers, namely the operation, IMS and the Syscon micro-computer. When the AC power is failure, for example in the case of a power cut or when the AC power cord is pulled out, the Ni-Cd batteries in the operation micro-computer and in the IMS micro-computer back up the contents of the RAM (Random Access Memory). The micro-computers are equipped with Back up batteries in case of power failure and if the voltage of these batteries is sufficiently higher than the necessary value for back up, the memory in the operation micro-computer and in the IMS is maintained, and the syscon micro-computer can be reset by the operation micro-computer. If the micro-computers are not equipped with back up batteries, or if the voltage is lower than the value required for back up (less than about 2.0V), the contents of the RAM in the micro-computers cannot be maintained. In this case, all three micro-computers will be reset after the power is turned on again and the RAM is cleared. However, if this does not happen because of external noise etc., the contents of the memory are disturbed and the micro-computers will not work or will malfunction. In this case, manual resetting of the micro-computers is required.

USEFUL INFORMATION

– BREAK-DOWN –

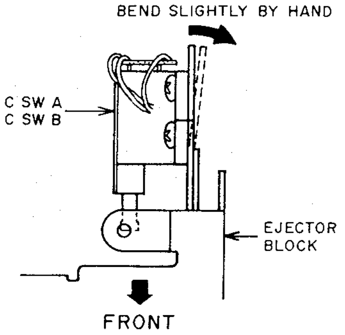
This data refers to the situation where the unit does not functionable in spite of the FUNCTION SW being depressed after the POWER CORD is plugged in (this condition called BREAK-DOWN).
This BREAK-DOWN system is designed for a protection of the tape in the unit and the unit itself from damage due to electrical malfunctions. Therefore check and confirm as follows to recover from BREAK-DOWN.

1. POWER SUPPLY
   1) POWER CORD
      Check that the POWER CORD is properly plugged in (when the POWER SUPPLY CIRCUIT functions normally, the STANDBY indicator on the FRONT PANEL is lit)
   2) FUSE (on POWER SUPPLY PCB)
      Check the FUSES F1, F2 on the POWER SUPPLY CIRCUIT. (Some models have another protection fuse on the SELECTOR PCB near the POWER TRANSFORMER)
   3) REGULATOR (on POWER SUPPLY PCB)
      Check the voltage of the REGULATOR IC (IC1 STK5434) PIN ⑬ which should be around 3.5V.
   4) AL (on POWER SUPPLY PCB)
      Check P107 $\boxed{5}$ AL input which should be less than 0.2V
2. MICROPROCESSOR INPUT
   1) MECHA DRIVE I/O EXPANDER (on MECHA DRIVE PCB)
      Check the IC1 PIN ⑱ MB88305P) which should be around 4.0V
   2) SUPPLY/TAKE UP BREAK COIL
      Check the SUPPLY and the TAKE UP BREAK coil DC resistance which should be 52 ohm ± 10%.
3. LOADING MOTOR FUNCTION
   1) LOADING MOTOR DC RESISTANCE
      Check the LOADING MOTOR DC resistance which should be 8.2 ohm ± 10%.
   2) LOADING MOTOR DRIVE (on MECHA DRIVE PCB)
      Check the voltages between PIN ② and PIN ⑩ of IC5 (BA6229) a few moments after the POWER CORD has been plugged in. Before this check, the worm gear of the LOADING MOTOR has to be turned to the loaded direction (PLAY direction) by hand or by some other means.

CAUTION: Do not scratch the surface of the worm gear.

– NO TAPE EJECT –

For situations where the CASSETTE TAPE can not be ejected in spite of the EJECT button being depressed (actually the CASSETTE TAPE comes up but then drops down), the position of the cassette switch A (C SW A) and the cassette SW B (C SW B) might be incorrect. Therefore the C SW A, B should be readjusted as indicated in the figure.

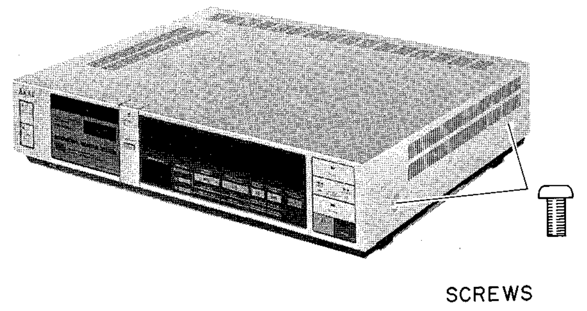


III. DISMANTLING OF UNIT

In case of trouble, etc. necessitating dismantling, please dismantle in the order shown in the photographs. Reassemble in reverse order.

* Photographs employed here are of model VS-301EK

1



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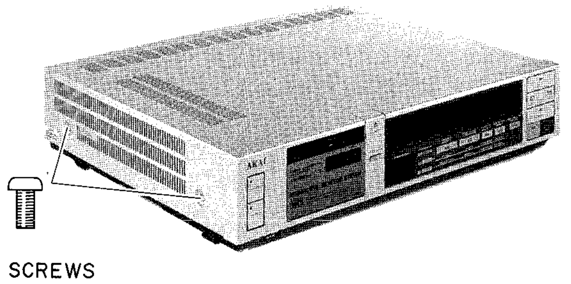
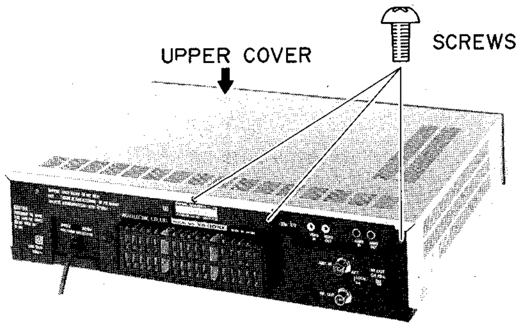
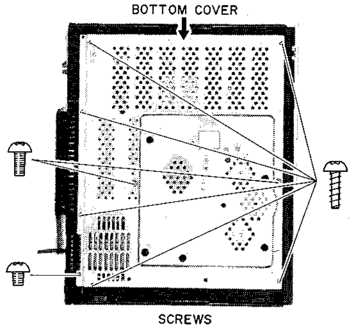


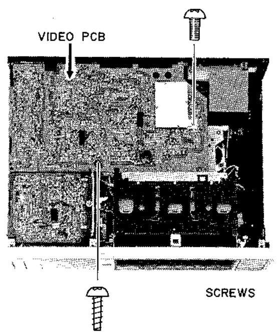
3


UPPER COVER
SCREWS

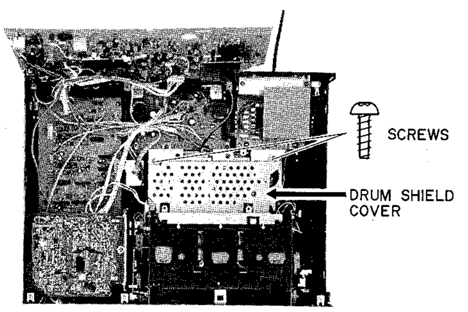
4


BOTTOM COVER
SCREWS

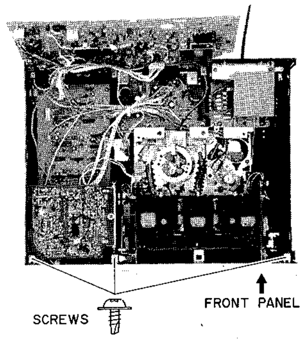
5


VIDEO PCB
SCREWS

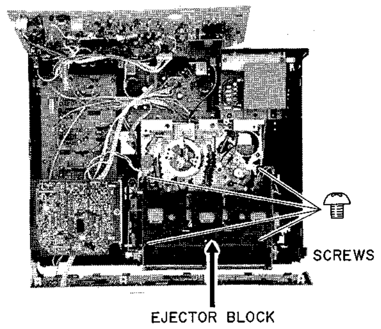
6


SCREWS
DRUM SHIELD COVER

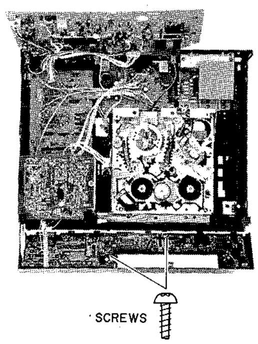
7


SCREWS
FRONT PANEL

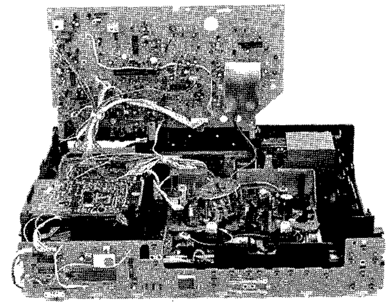
8


SCREWS
EJECTOR BLOCK

9



10



IV. CONTROLS

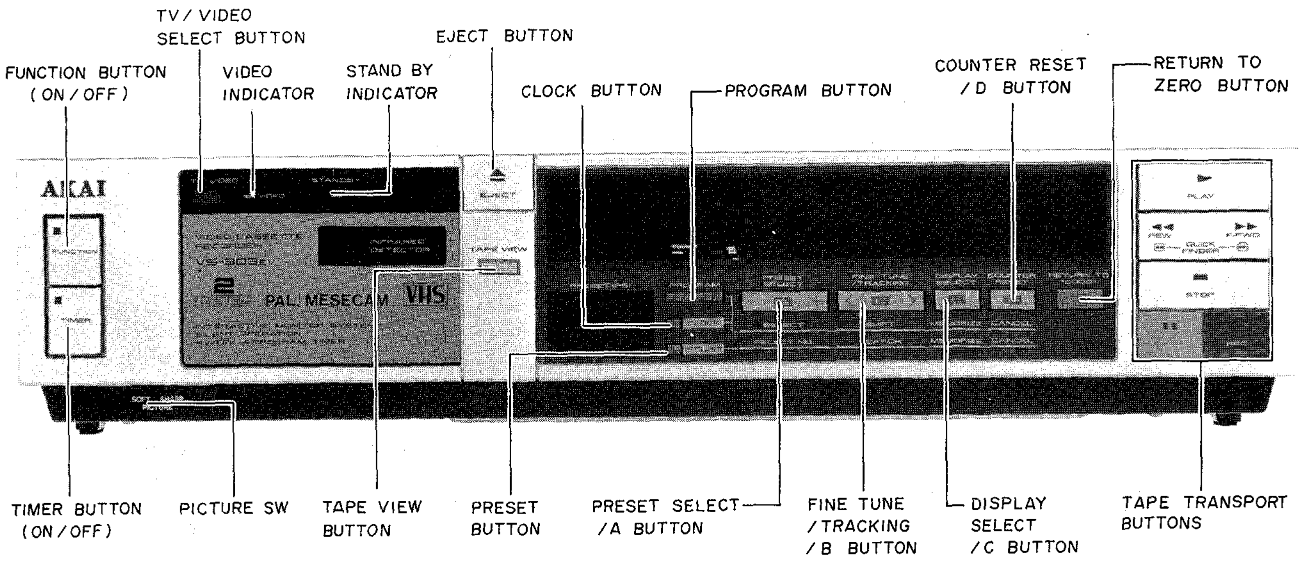

TV / VIDEO SELECT BUTTON
EJECT BUTTON
FUNCTION BUTTON (ON / OFF)
VIDEO INDICATOR
STAND BY INDICATOR
CLOCK BUTTON
PROGRAM BUTTON
COUNTER RESET / D BUTTON
RETURN TO ZERO BUTTON
AKAI
VS-303EV
PAL. MESECAM
VHS
TIMER BUTTON (ON / OFF)
PICTURE SW
TAPE VIEW BUTTON
PRESET BUTTON
PRESET SELECT / A BUTTON
FINE TUNE / TRACKING / B BUTTON
DISPLAY SELECT / C BUTTON
TAPE TRANSPORT BUTTONS

Fig. 4-1

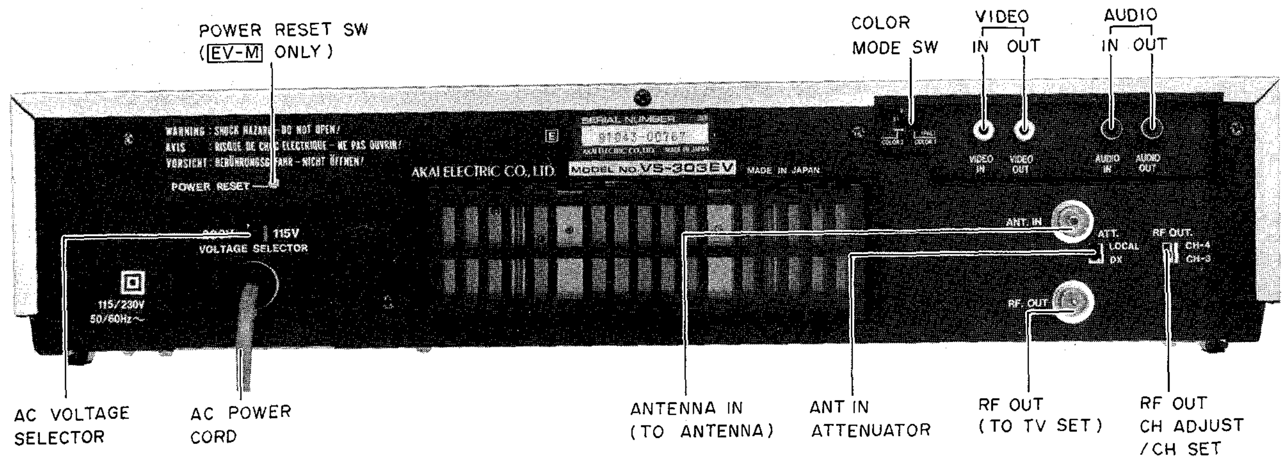

POWER RESET SW (EV-M ONLY)
COLOR MODE SW
VIDEO
IN
OUT
AUDIO
IN
OUT
AKAI ELECTRIC CO., LTD.
MODEL NO. VS-303EV
MADE IN JAPAN
POWER RESET
115V
VOLTAGE SELECTOR
115/230V
50/60Hz~
ANT. IN
ATT.
LOCAL
DX
RF OUT
CH-4
CH-3
AC VOLTAGE SELECTOR
AC POWER CORD
ANTENNA IN (TO ANTENNA)
ANT IN ATTENUATOR
RF OUT (TO TV SET)
RF OUT CH ADJUST / CH SET

Fig. 4-2

V. PRINCIPAL PARTS LOCATION

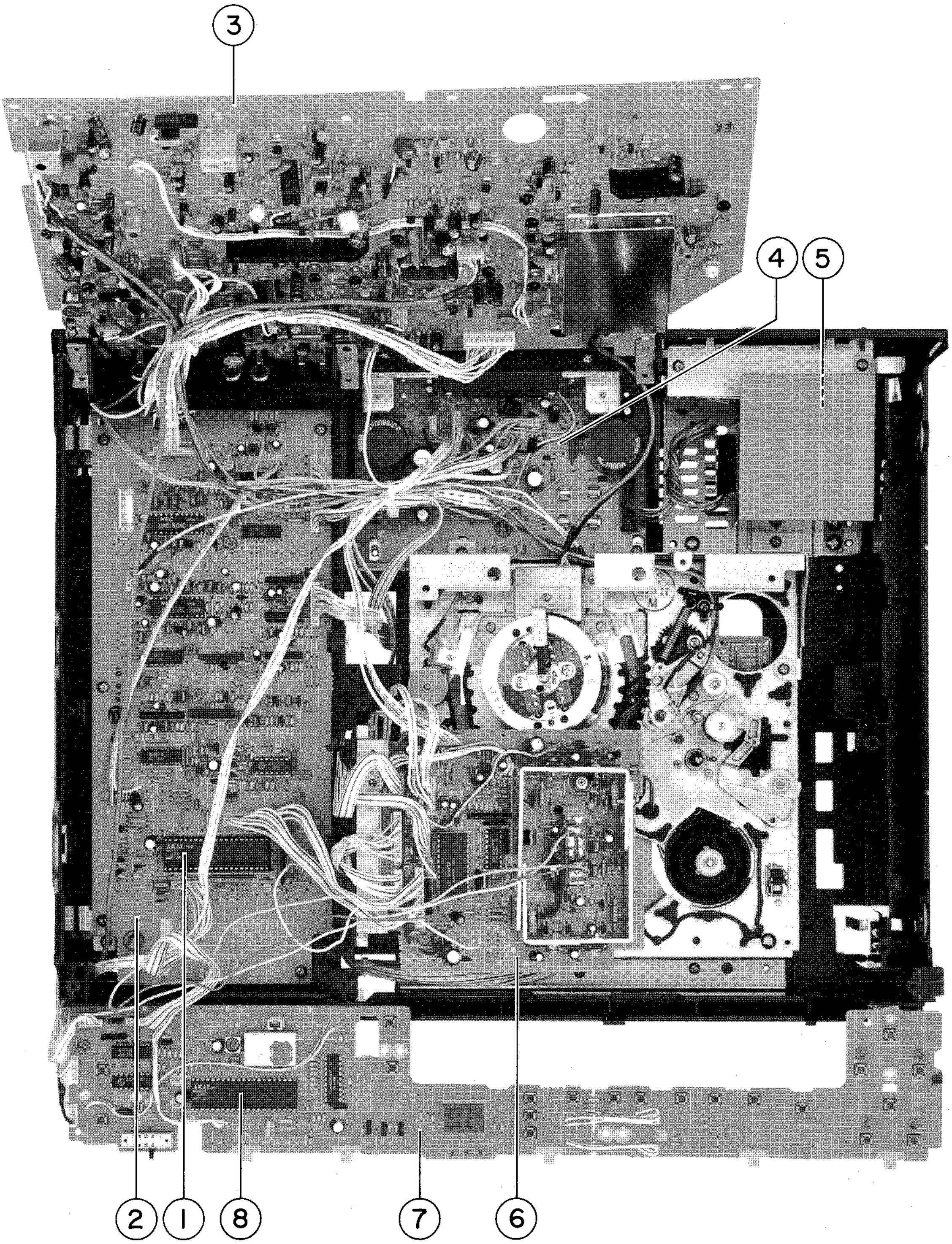


Fig. 5-1

1. SYSCON MICOM (MB8841-1363J)
2. SERVO PC BOARD (V1030A5070)
3. VIDEO PC BOARD (V1030A5060)
4. POWER SUPPLY PC BOARD (V1030A5092)
5. POWER TRANSFORMER
   EA V1027EA
   EG V1027EG
   EV-M .. V1027EZ
   EO V1027EO
   ES V1027ES
   EZ V1027EZ
6. MECHA DRIVE PC BOARD (V1030A5080)
7. OPERATION PC BOARD (V1027A5020)
8. OPERATION MICOM (MB88501-234M)

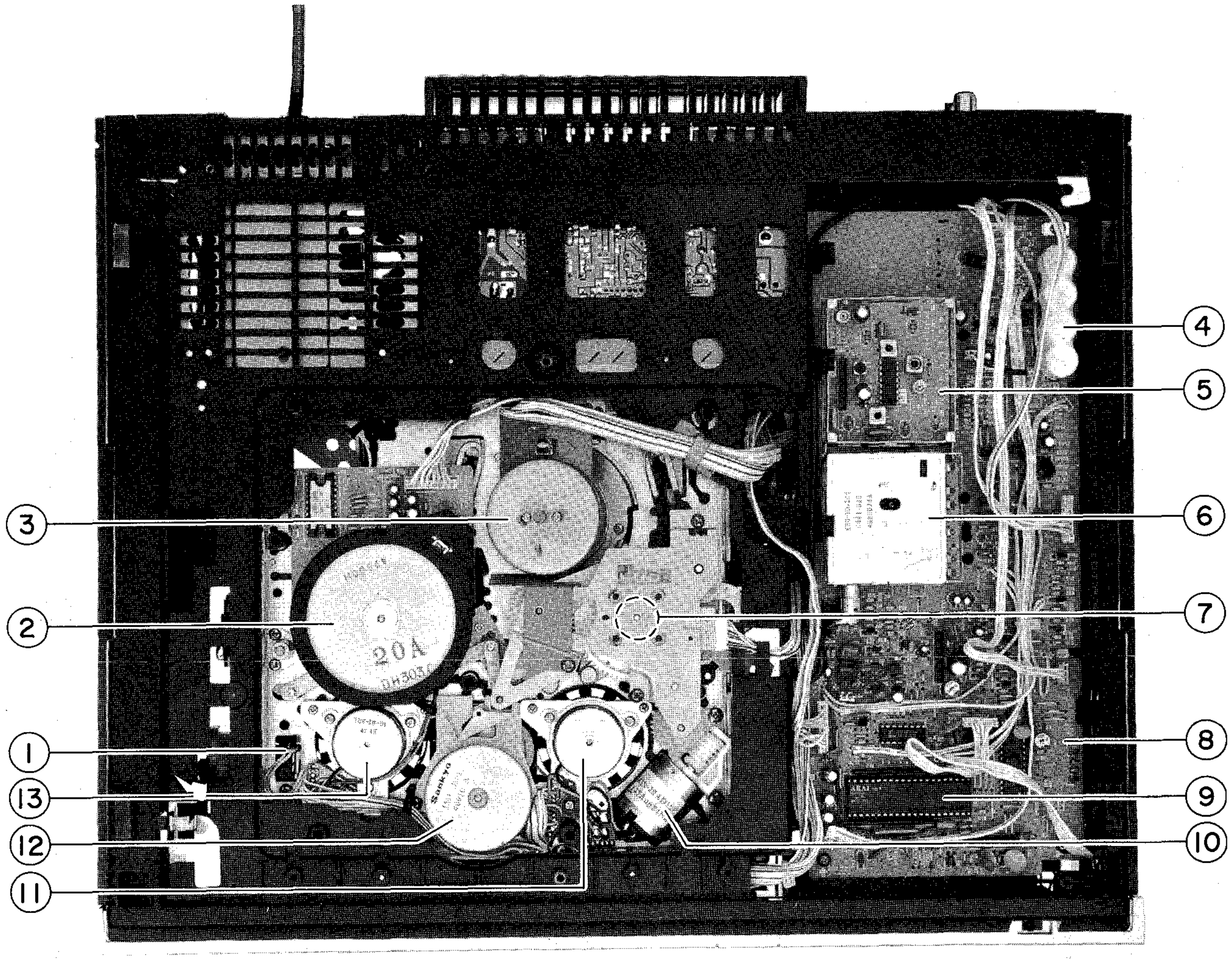
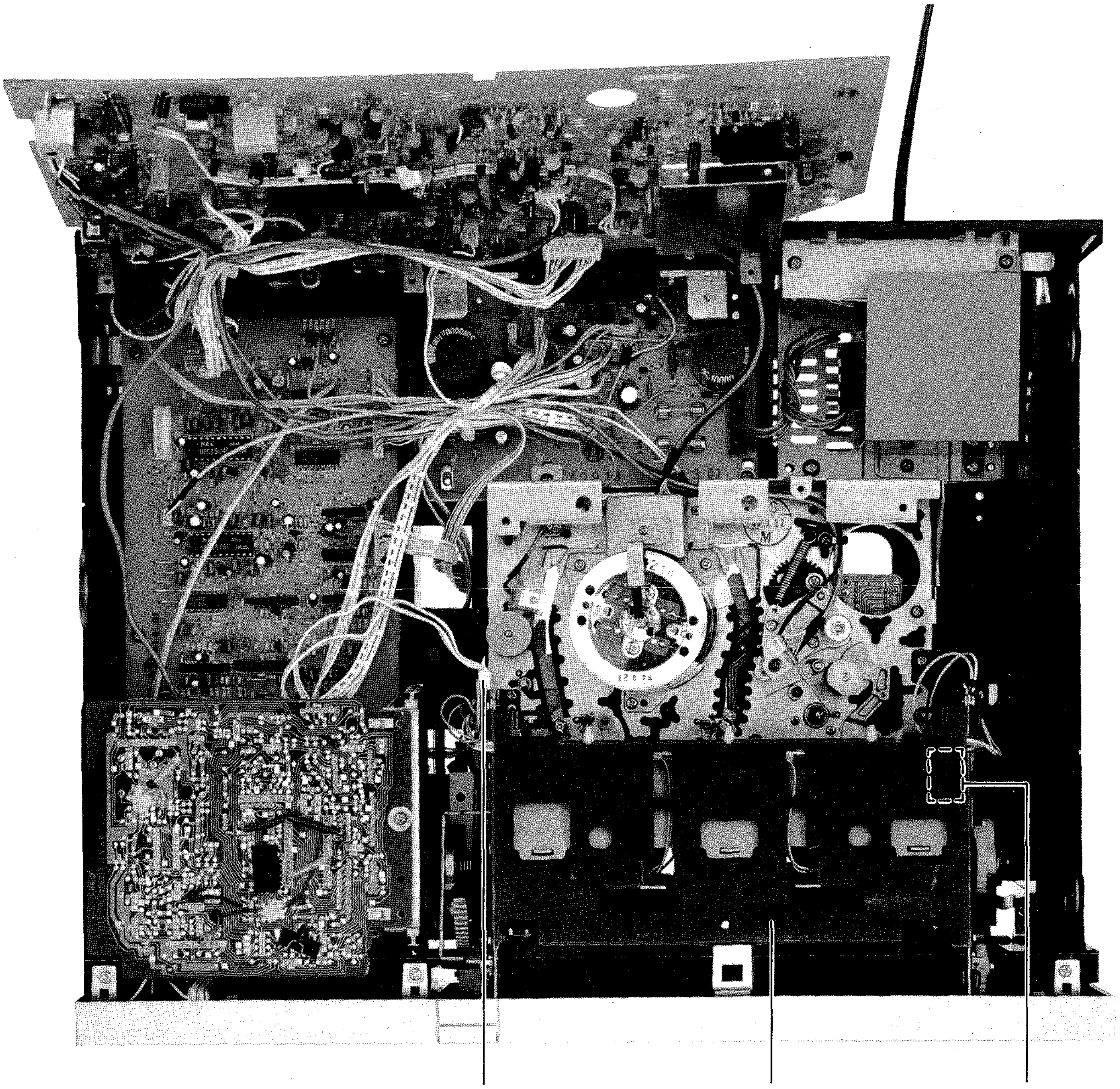


Fig. 5-2

1. CASSETTE SW & PC BOARD (V1030D5320) (C SW-C)
2. CAPSTAN MOTOR (M902) DD-XV021
3. DRUM MOTOR (M901) SM-200 & PC BOARD (M3220D5010)
4. BACK UP BATTERY
5. VIF UNIT
6. TUNER UNIT
7. ROTARY ENCODER
8. DEMODULATOR PC BOARD (V1030A5051)
9. IMS MICOM
   EG, EO, ES EV-M MB88505-267M
   EZ, EA MB88505-266M
10. LOADING MOTOR (M903) MXN13AD12
11. SUPPLY BRAKE
12. REEL MOTOR (M904) JME2B-K
13. TAKE UP BRAKE



P132 (ON EJECTOR BLOCK)
J132 (TO MECHA DRIVE)
EJECTOR BLOCK
C SW-A
C SW-B

Fig. 5-3

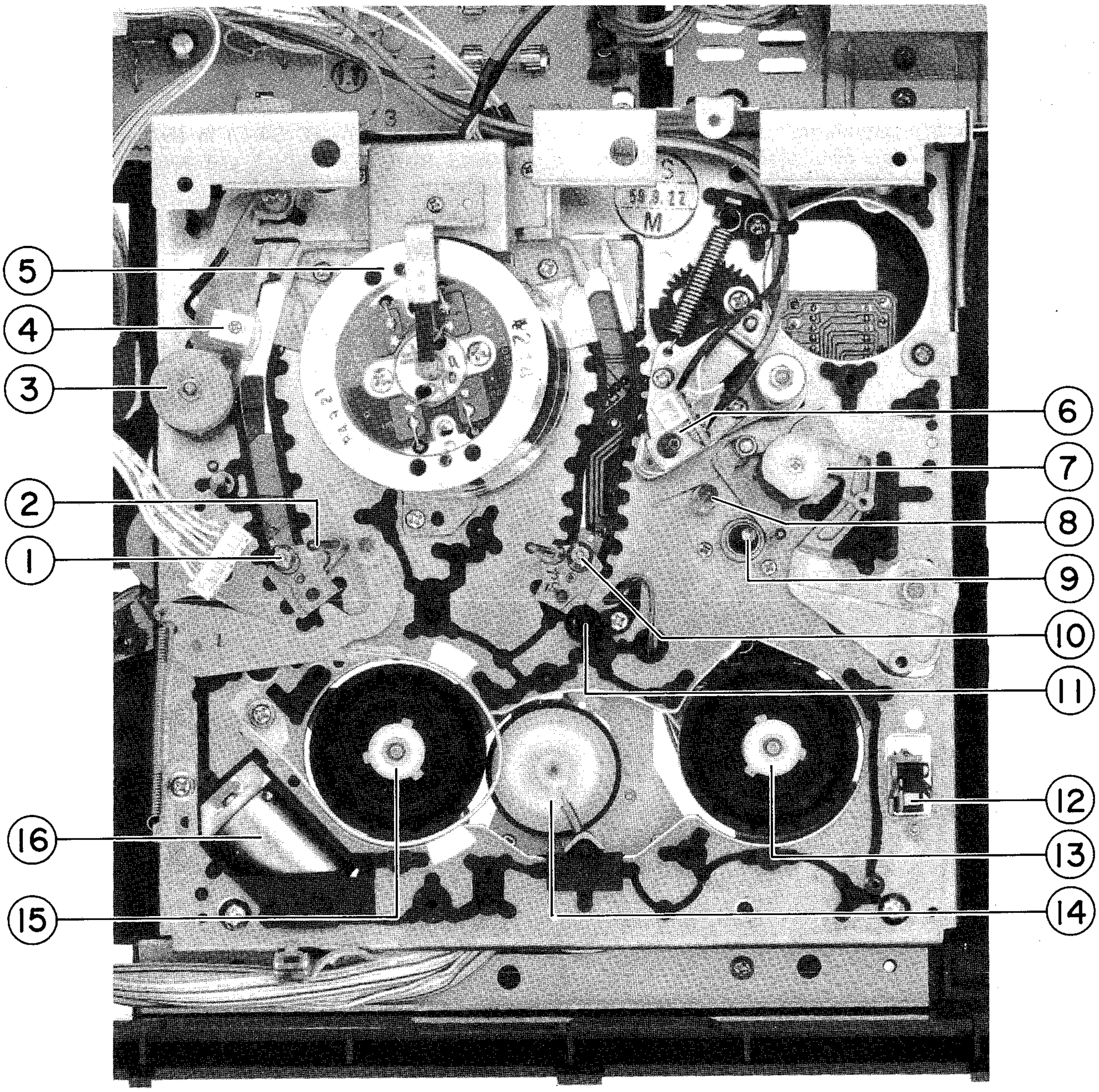


Fig. 5-4

1. LOADING LEADER (L)
2. LOADING LEADER (R)
3. IMPEDANCE GUIDE
4. FULL TRACK ERASE HEAD
5. HEAD DRUM BLOCK (UPPER DRUM)
6. A/C HEAD BLOCK
7. PINCH ROLLER
8. TAPE GUIDE
9. CAPSTAN SHAFT
10. LOADING LEADER (R)
11. CASSETTE LAMP
12. CASSETTE SW (C SW-C)
13. TAKE UP REEL TABLE
14. IDLER ARM
15. SUPPLY REEL TABLE
16. LOADING MOTOR (M903)

VI. MECHANICAL ADJUSTMENT

6-1 BEFORE THE ADJUSTMENT

The EJECTOR block has to be removed for mechanical adjustments.
Consequently the J132 connected with P132 on ELECTOR block has to be disconnected, but the unit does not function in this condition.
The achievement procedure of normal function without the EJECTOR block is as follows.

1) Disconnect J132 from P132 on the EJECTOR block.
2) Press the FUNCTION SW on the front panel.
3) Connect 7 and 5 of J132 (the numbers marked on J132).
4) Press Cassette SW (C SW-C) in the vicinity of the TAKE UP REEL while 7 and 5 of J132 are connected.
5) Remove the connection between 7 and 5 of J132.

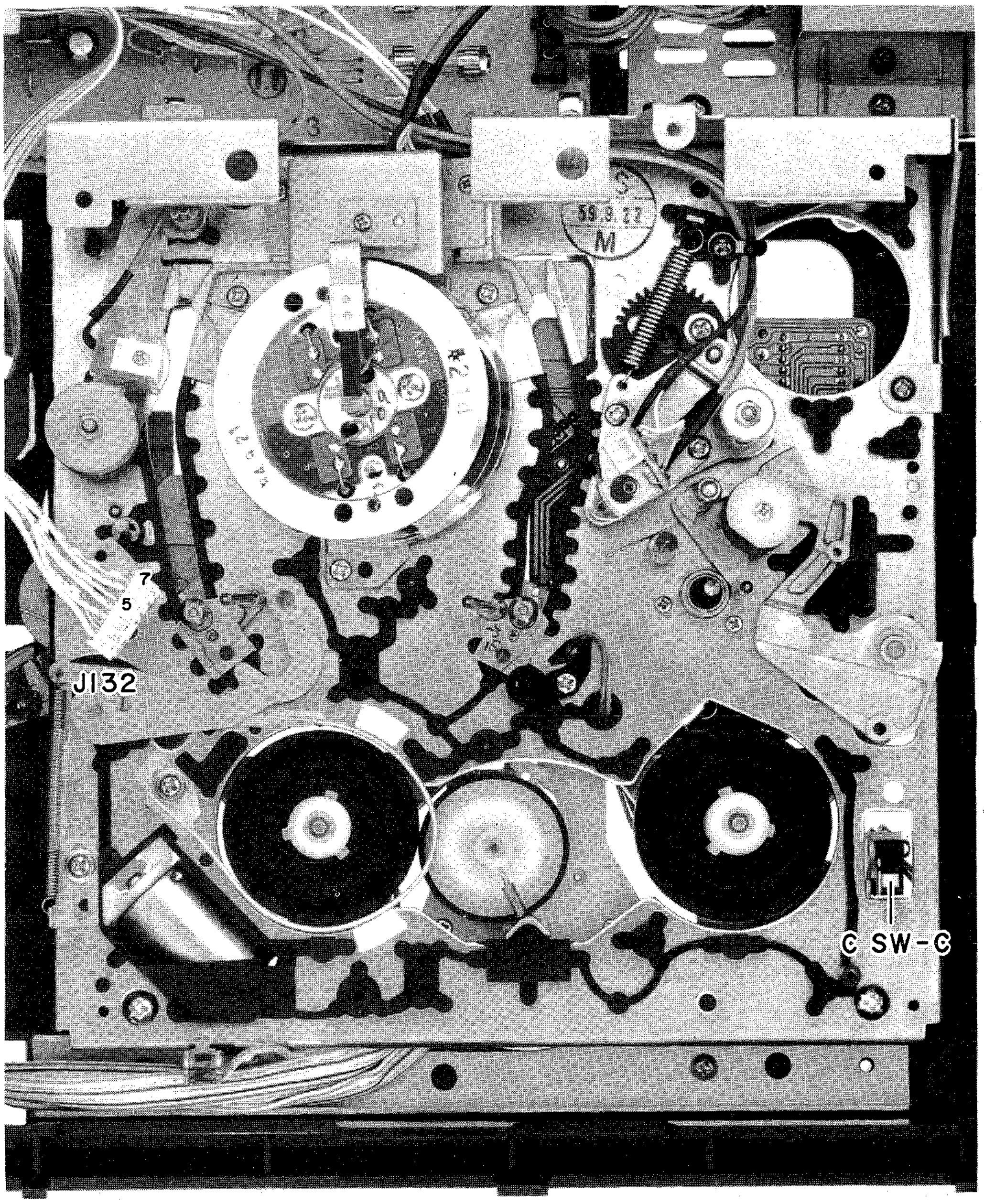


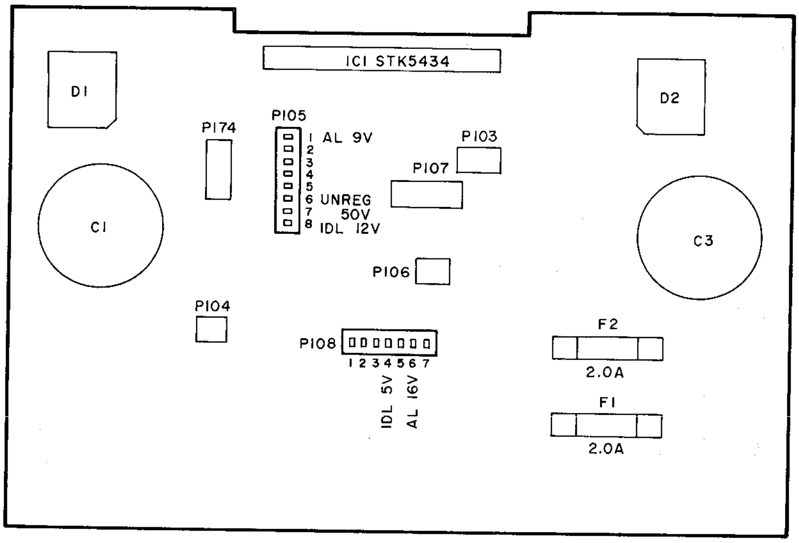
Fig. 6-1

6-2 CONFIRMATION OF REGULATOR OUTPUT

Check Items	Check Point	Result
IDL 5V	P108 4	5.1 ± 0.1V
IDL 12V	P105 8	12.0 ± 0.3V
AL 9V	P105 1	9.0 ± 0.1V
AL 16V	P108 6	16.0 ± 0.3V
UNREG 50V	P105 6	55V (Typical)

Chart 6 1

Confirm that the voltages measured by a digital DC voltmeter at each point are as indicated in Chart 6-1.

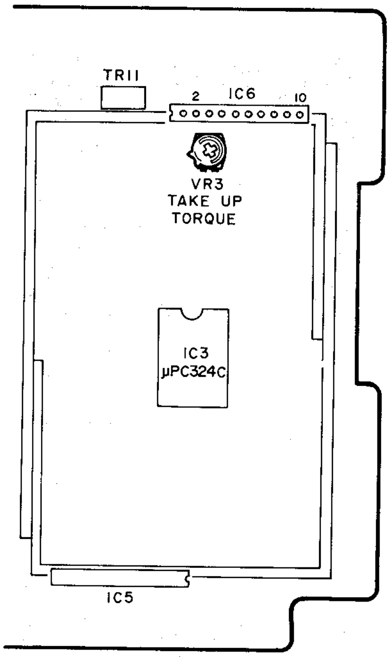

IC1 STK5434
D1
D2
P174
P105
1 AL 9V
2
3
4
5
6 UNREG
7 50V
8 IDL 12V
P103
P107
C1
C3
P106
P104
P108
1 2 3 4 5 6 7
IDL 5V
AL 16V
F2
2.0A
F1
2.0A

POWER SUPPLY PCB V1030A5090

Fig. 6-2 POWER SUPPLY PCB V1030A5090

6-3 TAKE UP REEL TORQUE ADJUSTMENT

1) Set a T-120 tape which has been rewound.
2) Press the PLAY button, check and adjust the voltage between IC6 PIN ⑩ (+) and IC6 PIN ② (–) on the MECHA DRIVE PC Board as 1.65 ± 0.04V by the VR3.


TR11
2
IC6
10
VR3
TAKE UP
TORQUE
IC3
µPC324C
IC5

MECHA DRIVE PCB V1030A5080

Fig. 6-3 MECHA DRIVE PCB V1030A5080

6-4 BACK TENSION ADJUSTMENT

1) Set the Back Tension Jig (AJ751181) and put some weight on the Back Tension Jig as a stabilizer.
2) Press the PLAY button, check and adjust the back tension as 26 ± 4 g-cm by the TENSION HOLDER position.

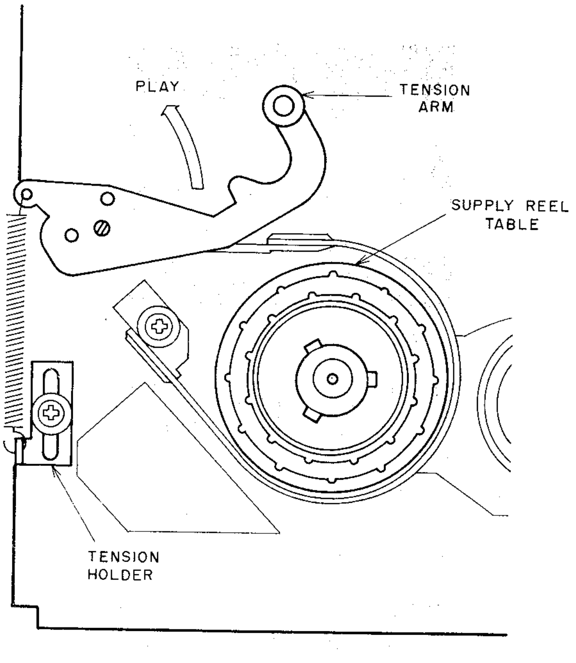

PLAY
TENSION
ARM
SUPPLY REEL
TABLE
TENSION
HOLDER

Fig. 6-4

6-5 LOADING LEADER HEIGHT ADJUSTMENT

1) Slightly loosen the set screws at the lower part of the LOADING LEADER so that the LOADING LEADER can be adjusted with reasonable tightness. Adjust the coarse height of the LOADING LEADER from the base mount as 0.6 to 0.8 mm.
2) Set the reference tape AT-750795 (TF-508RF) and press the PLAY button.
3) Connect on oscilloscope to TP7 on the VIDEO PC Board (RF ENVELOPE), turn the LOADING LEADER height adjustment screw head to obtain the flat envelope as Fig. 6-7 (e) ideal envelope.

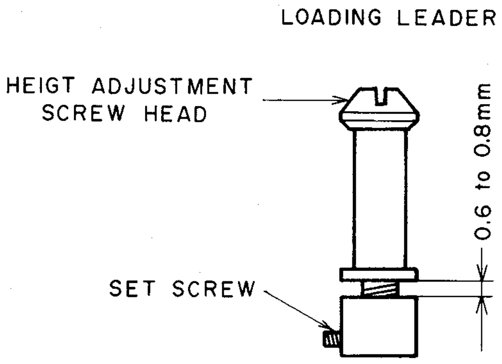

LOADING LEADER
HEIGT ADJUSTMENT SCREW HEAD
0.6 to 0.8mm
SET SCREW

Fig. 6-5

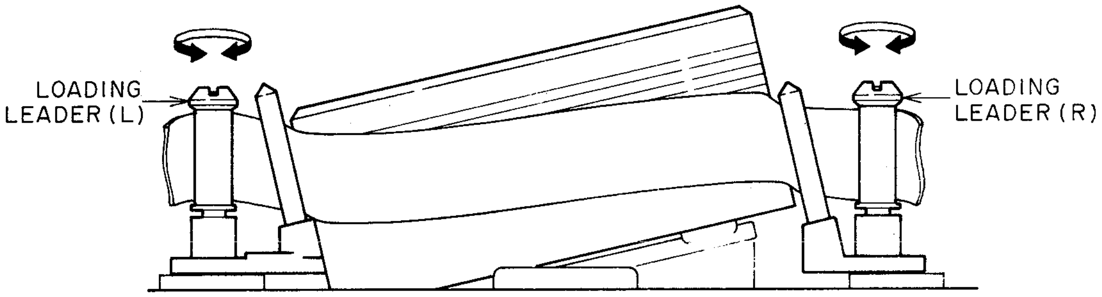
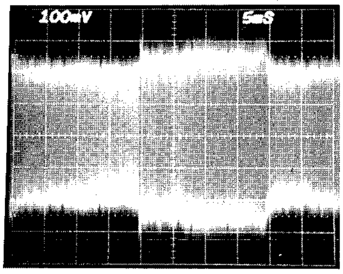

LOADING LEADER (L)
LOADING LEADER (R)

Fig. 6-6



IDEAL ENVELOPE

100mV
5mS
100mV
5mS

(a) R HEIGHT TOO LOW

(c) L HEIGHT TOO LOW

100mV
5mS
100mV
5mS

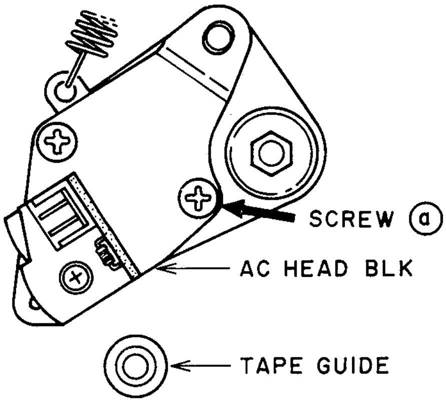
(b) R HEIGHT TOO HIGH

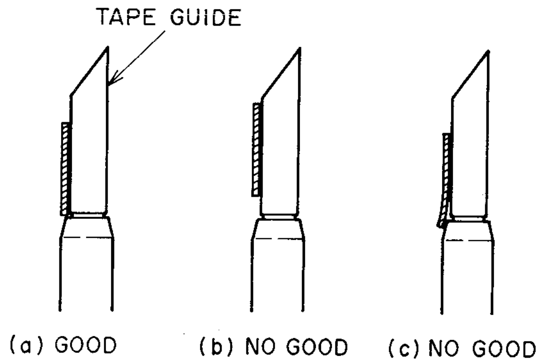
(d) L HEIGHT TOO HIGH

Fig. 6-7

6-6 TAPE CURL AT TAPE GUIDE ADJUSTMENT

Turn the screw ⓐ on the AC HEAD BLK so that the down edge of the tape touches the TU GUIDE lower part without any curl or waving.


SCREW ⓐ
AC HEAD BLK
TAPE GUIDE

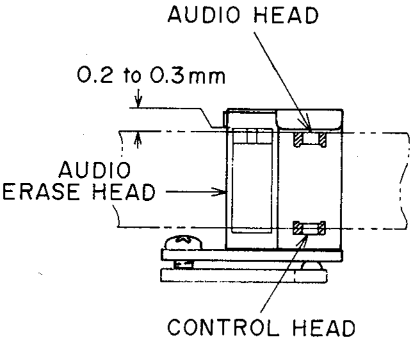


(a) GOOD (b) NO GOOD (c) NO GOOD

Fig. 6-8

6-7 AUDIO HEAD AZUMUTH ADJUSTMENT

1) Turn the NUT ⓐ for coarse AC BLOCK height adjustment as in Fig. 6-9.


AUDIO HEAD
0.2 to 0.3mm
AUDIO ERASE HEAD
CONTROL HEAD

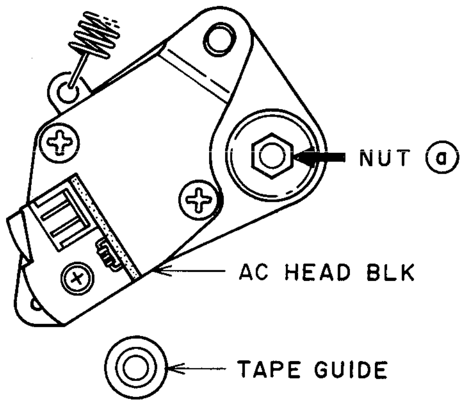

NUT ⓐ
AC HEAD BLK
TAPE GUIDE

Fig. 6-9

2) Connect an oscilloscope or a AC voltmeter to the AUDIO LINE OUT.
3) Set the reference tape AT-750795 (TF-508RF) and press the PLAY button.
4) Turn the screw ⓑ to obtain the maximum audio signal output.

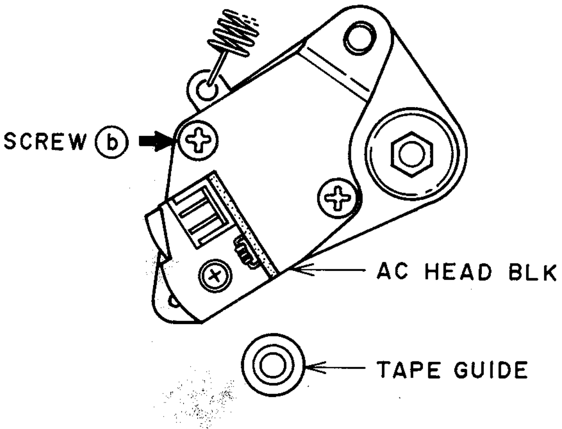

SCREW ⓑ
AC HEAD BLK
TAPE GUIDE

Fig. 6-10

6-8 RF ENVELOPE ADJUSTMENT

1) Set the reference tape AT-750795 (TF-508RF) and press the PLAY button.
2) Slightly turn the LOADING LEADER HEIGHT ADJUSTMENT SCREW HEAD (L) (R) to obtain the IDEAL ENVELOPE as shown in Fig. 6-7.

6-9 TAPE CURL AT TAPE GUIDE / IMPEDANCE GUIDE

1) Check the tape curl at TAPE GUIDE, slightly turn the screw ⓐ if the tape curl exists.
2) Check the tape curl at the IMPEDANCE GUIDE, turn the nut ⓑ if the tape curl at the IMPEDANCE GUIDE.

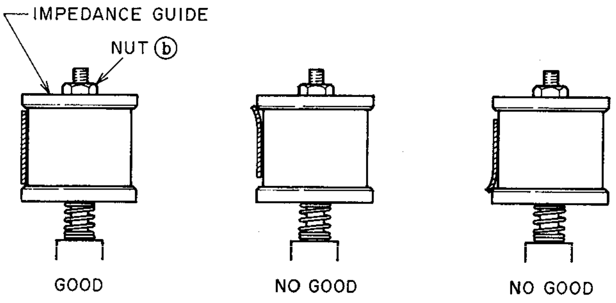


Fig. 6-11

6-10 AUDIO HEAD HEIGHT ADJUSTMENT

1) Connect an oscilloscope or a AC voltmeter to the LINE AUDIO OUT.
2) Set the reference tape AT-750795 (TF-508RF) and press the PLAY button.
3) Slightly turn the NUT ⓐ to obtain the maximum audio output shown in Fig. 6-9.

6-11 CONTROL HEAD POSITION ADJUSTMENT

1) Connect an oscilloscope to the TP7 on the VIDEO PC BOARD (RF ENVELOPE).
2) Set the reference tape AT-750795 (TF-508RF) and press the PLAY button.
3) Press B button (TRACKING) on the front panel and set X mark in the center position.
4) Loosen the screw ⓒ and turn the CTL ADJUST CAM by a 6 mm hexagon driver to obtain the maximum RF ENVELOPE, after this adjustment tighten the screw ⓒ.

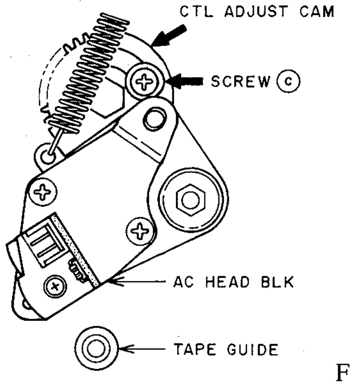


Fig. 6-12

6-12 CUE/REVIEW ADJUSTMENT

1) Set a E-180 tape, press the PLAY and the F.FWD button (CUE mode).
2) Turn the CUE/REVIEW GUIDE height adjustment nut ⓒ so that the wrinkle between the PINCH ROLLER and the CUE/REVIEW GUIDE are not existed.
3) Press the REV button (REVIEW mode) confirm the curl at the tape down edge is not existed at the TAPE GUIDE as shown in Fig. 6-8.
(Fig. 6-8 (c) is not acceptable, but Fig. 6-8 (b) is acceptable.)

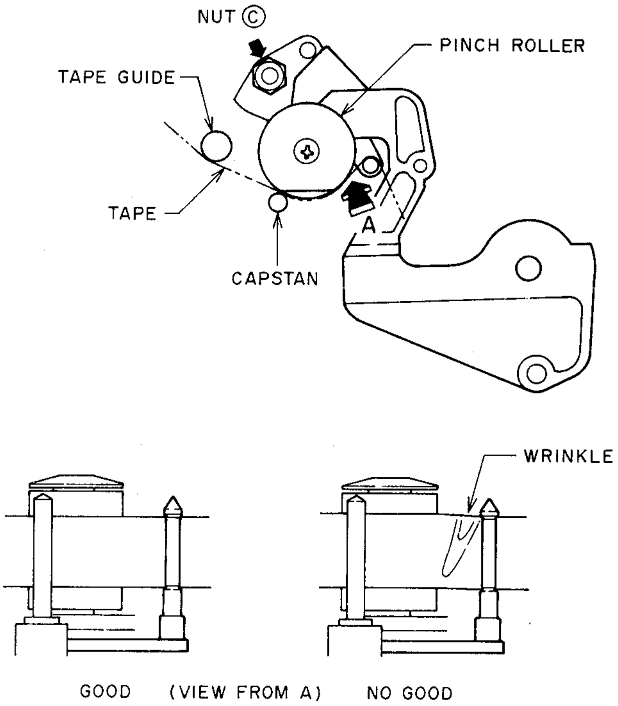


Fig. 6-13

After all adjustments above, tighten the LOADING LEADER set screws.

VII. HEAD DRUM REPLACEMENT

7-1 REPLACEMENT PROCEDURE

1) Remove the Drum Shield cover.
2) Unsolder the four wires from the Rotary Trans, BLUE BROWN for CH1 and BLUE RED for CH2.
3) Remove the Upper Drum Fixing Screws.
4) Install the Upper Drum (Head Drum).
5) Tighten the Upper Drum Fixing Screws.
6) Resolder the four wires from the Rotary Trans.

NOTE: The height precisior is required for the proper performance, and the head tips are fragile, so the following points should be noted when replacing the upper drum block.

(a) Before fixing, clean both surfaces where the upper drum and the rotary transformer part meet with pure alcohol.
(b) When installation of upper drum, if it does not go on to the shaft easily, clean the hole in the upper drum with pure alcohol and put a little oil on the shaft.
(c) Make sure that the upper drum fixing screw holes on the rotary transformer part and the upper drum fixing screw penetration holes match exactly before inserting the fixing screws.
(d) Tighten the two upper drum fixing screws alternately and gradually. Tighten them at 6 kg-cm torque.
(e) Do not loosen the set screw on the collar preload.

7-2 AFTER REPLACEMENT

After replacement, the following adjustments and confirmations are necessary for the proper performance.

1) Tracking preset adjustment (SERVO adjustment step 6)
2) PB switching point adjustment (SERVO adjustment step 7)
3) REC switching point adjustment (SERVO adjustment step 8)
4) PB EQ adjustment (VIDEO adjustment step 9)
5) REC Current adjustment (VIDEO adjustment step 8)
6) Comfirmation of Y (luminance) C (chrominance) levels (VIDEO adjustment step 10, 12)

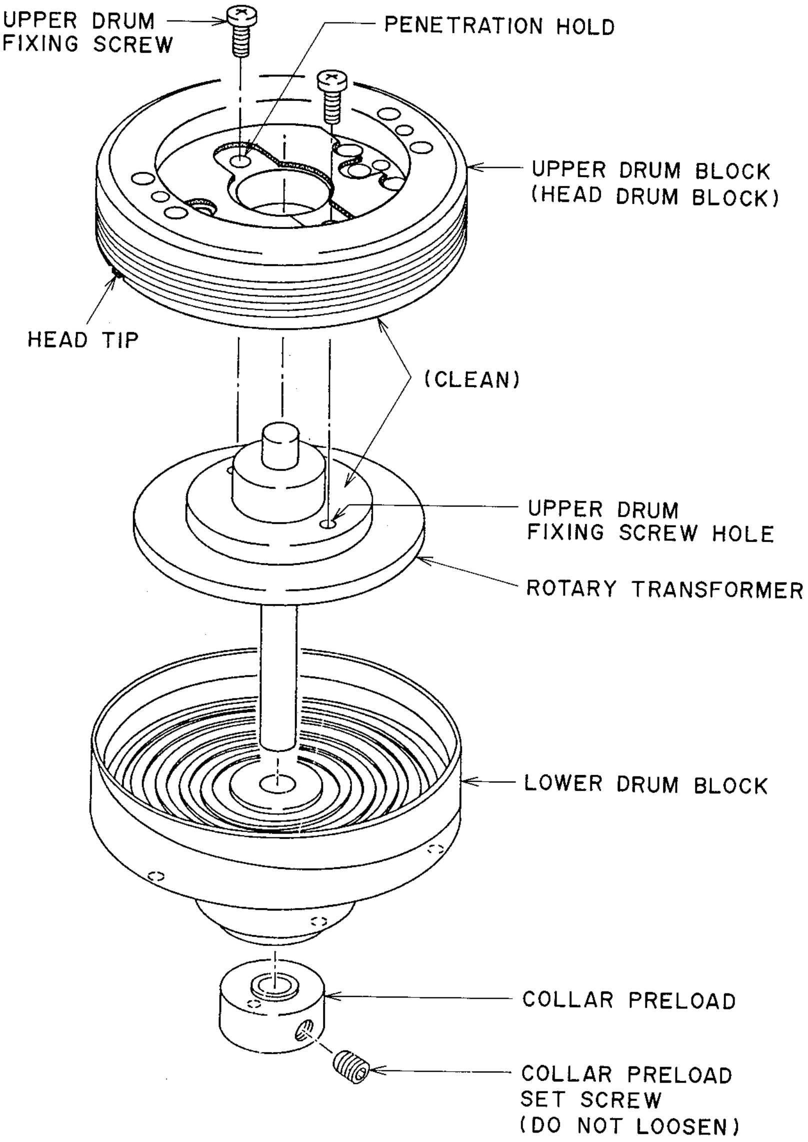

UPPER DRUM FIXING SCREW
PENETRATION HOLD
UPPER DRUM BLOCK (HEAD DRUM BLOCK)
HEAD TIP
(CLEAN)
UPPER DRUM FIXING SCREW HOLE
ROTARY TRANSFORMER
LOWER DRUM BLOCK
COLLAR PRELOAD
COLLAR PRELOAD SET SCREW (DO NOT LOOSEN)

Fig. 7-1

VIII. ELECTRICAL ADJUSTMENT

8-1 SERVO ADJUSTMENT

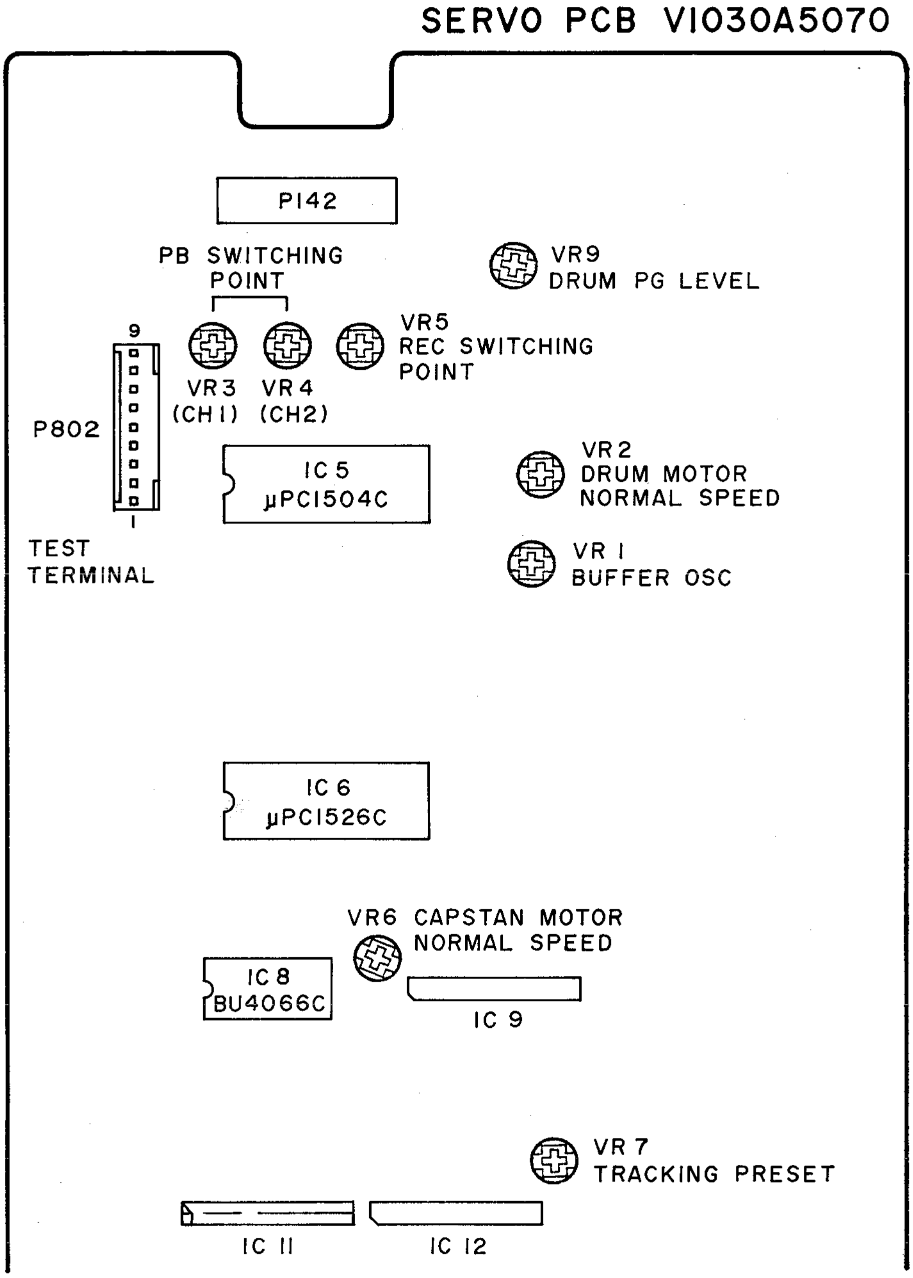
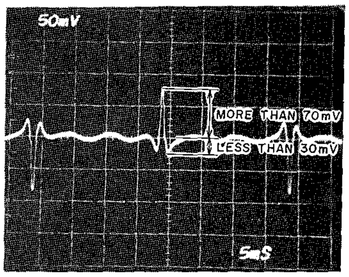
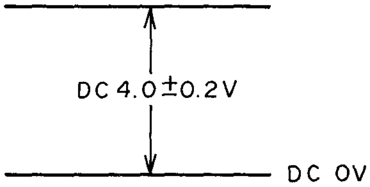
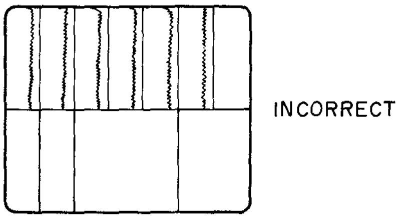
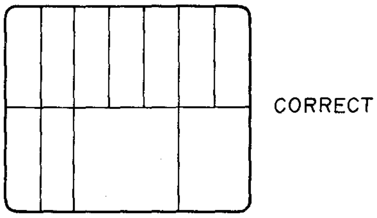
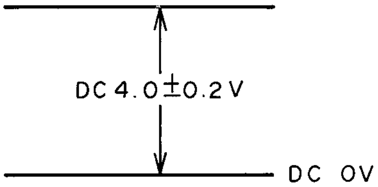
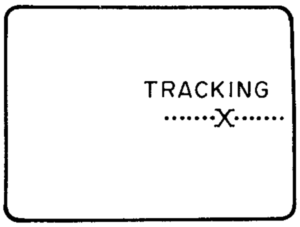
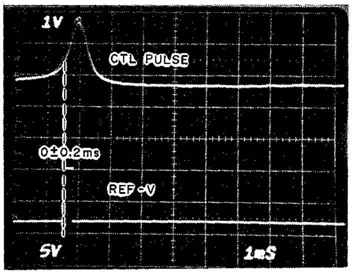
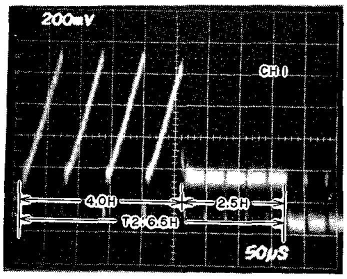
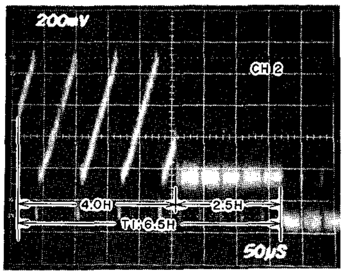
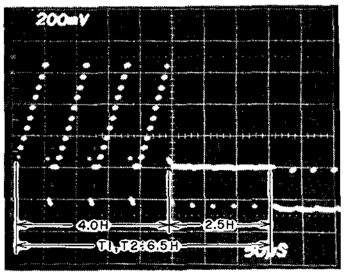

SERVO PCB VI030A5070
P142
PB SWITCHING POINT
VR9
DRUM PG LEVEL
9
VR5
REC SWITCHING POINT
VR3
(CH1)
VR4
(CH2)
P802
1
TEST TERMINAL
IC5
μPC1504C
VR2
DRUM MOTOR NORMAL SPEED
VR 1
BUFFER OSC
IC6
μPC1526C
VR6 CAPSTAN MOTOR NORMAL SPEED
IC8
BU4066C
IC 9
VR 7
TRACKING PRESET
IC 11
IC 12

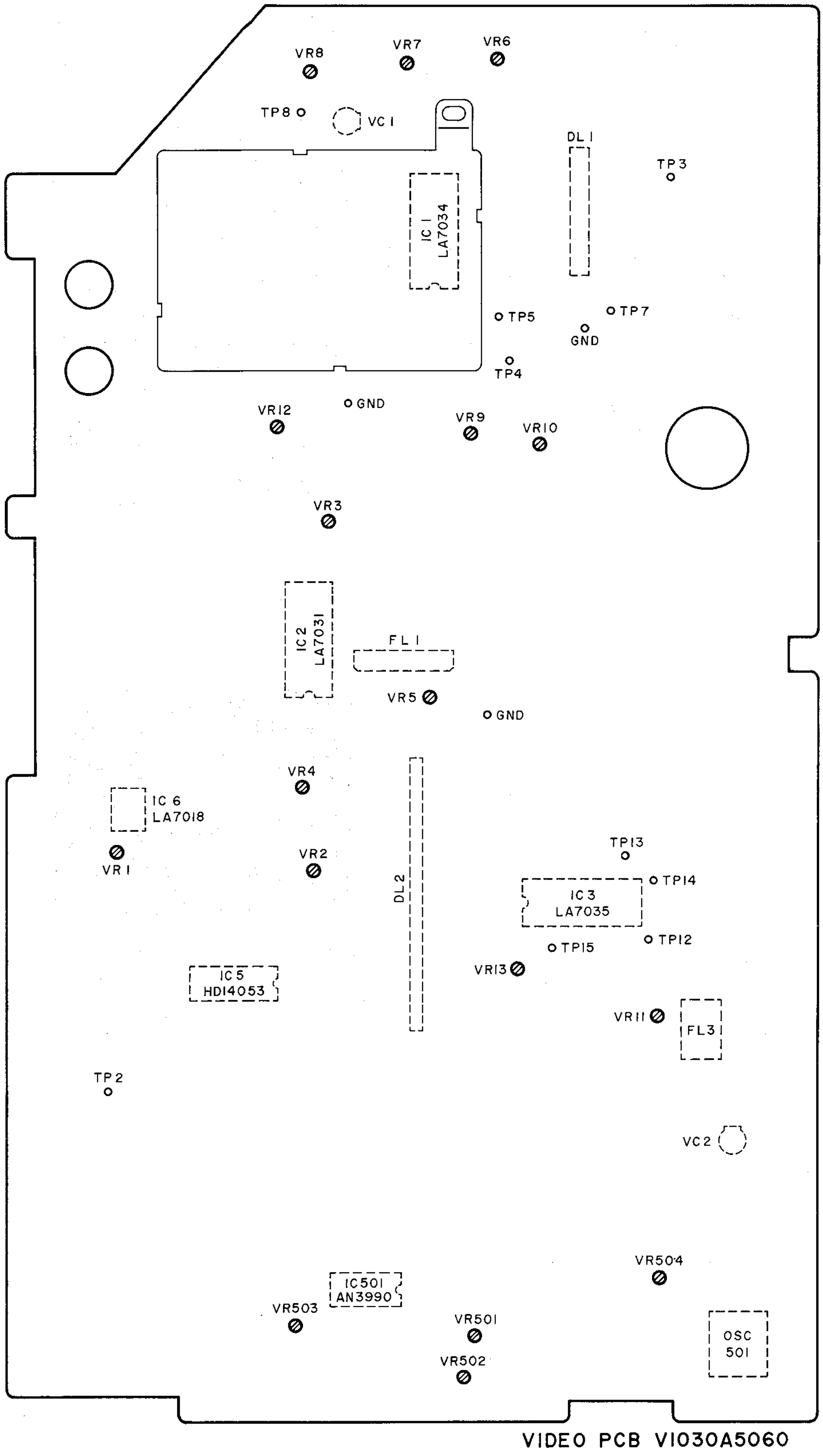
Fig. 8-1

Step	Adjustment Item	Input Signal or Test Tape	Mode	Test Point	Adjustment Parts	Result & Remarks
1	Drum Motor PG Level	PAL Reference Test Tape AT-750795 (TF-508RF)	PB	Test Terminal (Pin 1)	VR9	 Adjust VR9 so that the PG Level is within the levels shown above.
2	Drum Motor Normal Speed	PAL Reference Test Tape AT-750795 (TF-508RF)	PB	Test Terminal (Pin 3)	VR2	 Adjust VR2 so that the Drum Servo phase error Voltage is within DC4.0 ± 0.2V.
3	Buffer OSC	PAL COLOR BAR Tape AT-750797 (TF-510CB)	REV	MONITOR TV	VR1	  Adjust VR1 so that color convergence on MONITOR TV is not blur.

Step	Adjustment Item	Input Signal or Test Tape	Mode	Test Point	Adjustment Parts	Result & Remarks
4	Capstan Motor Normal Speed	PAL Reference Test Tape AT-750795 (TF-508RF)	PB	Test Terminal (Pin 7)	VR6	 Adjust VR6 so that the Capstan Servo phase error Voltage is within DC4.0 ± 0.2V.
5	Capstan Motor FG	PAL Reference Test Tape AT-750795 (TF-508RF)	PB	Test Terminal (Pin 8)	Confirmation	Connect a Frequency counter to Test Terminal Pin 8, Confirm the Frequency is within 1200 ± 6 Hz.
6	Tracking Preset	PAL Reference Test Tape AT-750795 (TF-508RF)	PB	Test Terminal (Pin 6) CTL. Pulse (Pin 5) REF-V	VR7	 Tracking marker "X" on the monitor Screen is set to the Center of the dotted line by Pressing the Tracking Button on the Front Panel.  Adjust VR7 so that the phase at raising part of CTL pulse and REF-V pulse are lined up.

Step	Adjustment Item	Input Signal or Test Tape	Mode	Test Point	Adjustment Parts	Result & Remarks
7	PB Switching Point	PAL Reference Test Tape AT-750795 (TF-508RF)	PB	TP2 (Video PCB) Test Terminal (Pin 4) For Trigger	VR3 (CH-1) VR4 (CH-2)	  Adjust T1 with VR3 to 6.5 ± 0.5H and T2 with VR4. The difference between T1 and T2 should be within 0.5H.
8	REC Switching Point	PAL COLOR BAR from Color Bar Generator	REC	TP2 (Video PCB) Test Terminal (Pin 4)	VR5	 Adjust T1 and T2 waveforms 6.5 ± 0.5H, as the same manner in PB switching point adjustment.

8-2 VIDEO ADJUSTMENT


VR8
VR7
VR6
TP8
VC I
DL I
TP3
IC I
LA7034
TP5
TP7
GND
TP4
VR12
GND
VR9
VR10
VR3
IC2
LA7031
FL I
VR5
GND
VR4
IC 6
LA7018
VR I
VR2
DL2
TP13
TP14
IC3
LA7035
TP15
TP12
VR13
IC5
HD14053
VR11
FL3
TP2
VC2
VR504
IC501
AN3990
VR503
VR501
VR502
OSC
501
VIDEO PCB VI030A5060

VR1	TP2	EE LEVEL
VR2	TP2	CHARACTOR LEVEL
VR3	TP2	PB Y LEVEL
VR4	TP2	PB CHROMA LEVEL
VR5	TP3	AGC GAIN
VR6	TP4	WHITE CLIP
VR7	TP8	DARK CLIP
VR8	TP8	DEVIATION
VR9	TP5	REC Y CURRENT
VR10	TP7	PB EQ (1st PEAKING)
VR11	TP13	LOCAL OSC (4.433169)
VR12	TP5	REC CHROMA CURRENT
VR13	TP14	AFC
VC1	TP4	CARRIER SET
VC2	TP12	fs+1/8fh

Fig. 8-2 VIDEO PCB (View from Pattern Side)

Precautionary items prior to adjustments

1. The color bar generator output should be 1.0 Vp-p.

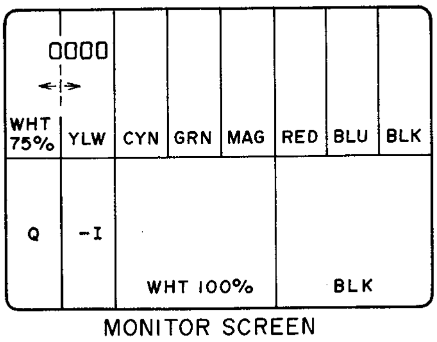
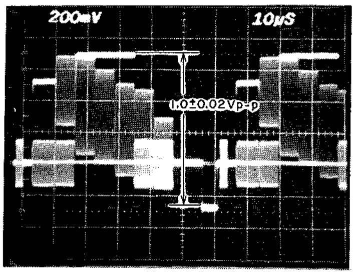
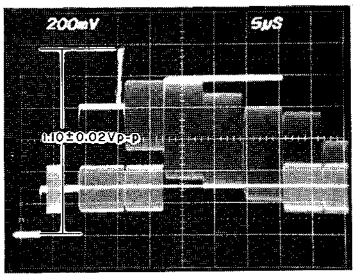
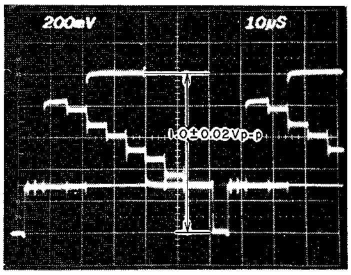
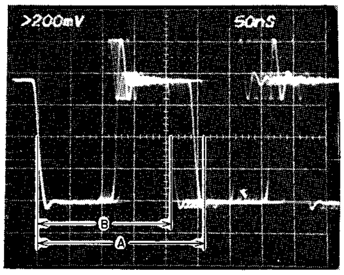
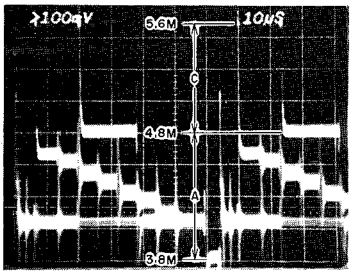
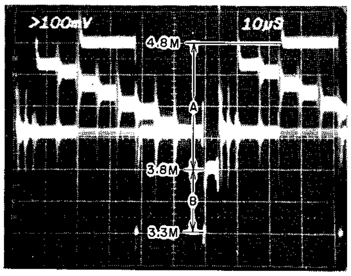


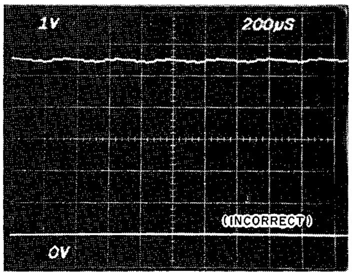
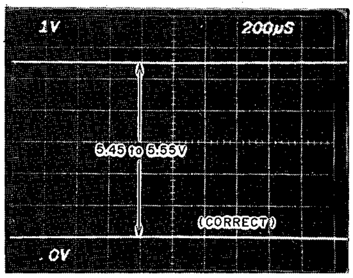
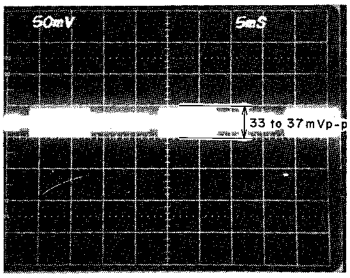
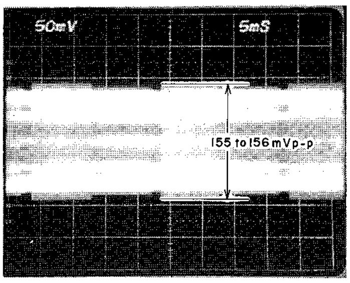
Fig. 8-3 PAL Color Bar

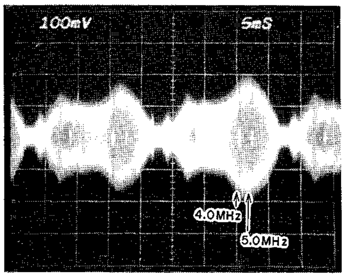
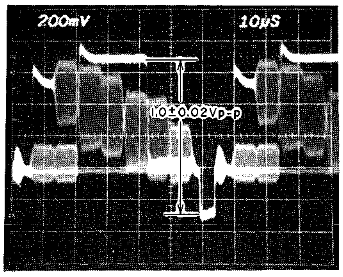
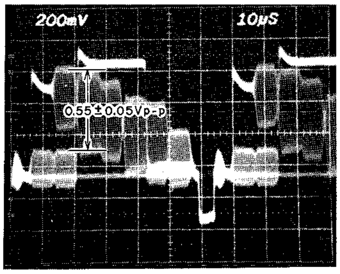
2. The video output terminal should be terminated with 75 ohms (dummy or Monitor TV load)

Step	Adjustment Item	Input Signal or Test Tape	Mode	Test Point	Adjustment Parts	Result & Remarks
1	EE Level	PAL Color Bar from Color Bar Generator	EE	TP2	VR1	 Adjust VR1 so that the video output (TP2) is 1.0 ± 0.02 Vp-p.
2	Charactor Level	PAL Color Bar from Color Bar Generator	EE	TP2	VR2	 Indicate tape counter on the monitor screen by Display Button on the Front Panel. Adjust VR2 so that the charactor level on a Gray (75%) part is 1.10 ± 0.02 Vp-p. Confirm that the buzz from the Monitor TV speaker is not existed.

* In Step 2, Charactor Level adjustment, the buzz should be confirmed through RF converter output and a Monitor TV ANT IN (Via Monitor TV tuner).

Step	Adjustment Item	Input Signal or Test Tape	Mode	Test Point	Adjustment Parts	Result & Remarks
3	AGC	PAL Color Bar from Color Bar Generator	EE	TP3	VR5	 Adjust VR5 so that Voltage is within 1.0 ± 0.02 Vp-p. At this time Confirm so that the chroma signal is not appeared.
4	FM OSC	PAL Color Bar from Color Bar Generator	REC	TP4	VC1 (Carrier set) VR8 (Deviation)	 Carrier set = A = 0.263µS (3.8 MHz) Deviation = B = 0.208µS (4.8 MHz)
5	White Clip and Dark Clip	PAL Color Bar from Color Bar Generator	EE	TP8	VR6 (White Clip) VR7 (Dark Clip)	  Adjust VR7 and VR6 so that the waveform at TP8. White clip A:C = 1:0.8 Dark clip A:B = 1:0.5

Step	Adjustment Item	Input Signal or Test Tape	Mode	Test Point	Adjustment Parts	Result & Remarks
6	AFC	PAL Color Bar from Color Bar Generator	EE	TP14	VR13	  Adjust VR13 so that the DC Voltage at TP14 is DC5.45 to 5.55V without ripple.
7	fs+1/8fh	PAL Color Bar from Color Bar Generator	EE	TP12	VC2	Adjust VC2 so that the Frequency Counter reads 4.435571 MHz ± 10 Hz;
8	REC Current	PAL Color Bar from Color Bar Generator	REC	TP5	VR12 (Chroma)	1. Turn VR9 fully counter clockwise (Y level is zero)  2. Adjust VR12 so that the chroma REC waveform is 33~37 mVp-p.
					VR9 (Y)	 Adjust VR9 so that the Y REC current waveform is 155~165mVp-p.

Step	Adjustment Item	Input Signal or Test Tape	Mode	Test Point	Adjustment Parts	Result & Remarks
9	PB EQ (1st PEAKING)	RF Sweep Test Tape AT-750802 (TF-515SW)	PB	TP7	VR10	 Adjust VR10 so that the 4.0 MHz and 5.0 MHz marker levels are equal.
10	PB Y Level	Color Bar Test Tape AT-750797 (TF-510CB)	PB	TP2	VR3	 Adjust VR3 so that the Y signal is 1.0 ± 0.02 Vp-p.
11	Local OSC (4.433619)	Color Bar Test Tape AT-750797 (TF-510CB)	PB	TP13	VR11	Adjust VR11 so that frequency counter reads 4.433619MHz ± 10Hz.
12	PB Chroma Level	Color Bar Test Tape AT-750797 (TF-510CB)	PB	TP2	VR4	 Adjust VR4 so that the cyan level is within 0.55 ± 0.05 Vp-p.

NOTE:

Test equipment performance requirement

1. Frequency counter
   Frequency range : 10 Hz ~ 10 MHz (or more)
   Input impedance : more than 1 MΩ
   Input sensitivity : less than 25 mVrms
2. Oscilloscope
   Time base : less than 0.5 μsec (without x 10 magnifier)
   : less than 0.05 μsec (with x10 magnifier)
   Vertical frequency range : DC ~ 30 MHz (or more)
   Vertical input impedance : more than 1 MΩ dual trace
   Vertical input sensitivity : less than 5 mV

8-3 IMS (Interactive Monitor System) ADJUSTMENT

Step	Adjustment Item	Input Signal or Test Tape	Mode	Test Point	Adjustment Parts	Result & Remarks
1	Charactor Position	PAL Color Bar from Color Bar Generator	FUNCTION OFF ↓ FUNCTION ON (EE)	MONITOR TV	VI1 on DEMODULATOR PCB	Adjust VR1 so that the charactors on the MONITOR TV SCREEN are central at both left and right side.
2	SYNC AFC	PAL Color Bar from Color Bar Generator	EE	MONITOR TV	VR2 on DEMODULATOR PCB	Adjust VR2 so that the charactors on the MONITOR TV SCREEN are stabilized.

8-4 AUDIO ADJUSTMENT

Adjustment parts are located on the VIDEO PCB (V1030A5060)

Step	Adjustment Item	Input Signal or Test Tape	Mode	Test Point	Adjustment Parts	Result & Remarks
1	PB Level	1 kHz Test Tape (TF-513LS) AT-750800	PB	Audio Output	VR502	−9.0 ± 0.5 dBm
2	A/C Head Azimuth	6 kHz Test Tape (TF-508RF) AT-750795	PB	Audio Output	A/C Head Adjustment Screw ⓑ	-9.0^{+2}_{-4} dBm
3	EE Level	Audio Input 1 kHz, −8.0 dBm	EE	Audio Output	VR501	−6 ± 0.5 dBm
4	AGC	Audio Input 1 kHz, +12 dBm	EE	Audio Output	Confirm	−2.0 to −4.5 dBm
5	Bias OSC Frequency	No Signal Input	REC	A/C Head Terminal	Confirm	69 ± 1 kHz
6	Bias Current	No Signal Input	REC	A/C Head Terminal (Ref. to Fig. 8-4)	VR-504	2.5 mVRMS
7	REC Level	Audio Input 1 kHz, −8 dBm (Audio Output −6 dBm)	REC/PB	Audio Output	VR503	−6.0 ± 2 dBm (Within 3% Distortion)
8	REC/PB Frequency Response	Audio Input 7 kHz, −28 dBm	REC/PB	Audio Output	Confirm (If needed Readjust VR-504)	−26.0 ± 2 dBm
		Audio Input 100 Hz, −28 dBm				-26.0^{+1}_{-4} dBm

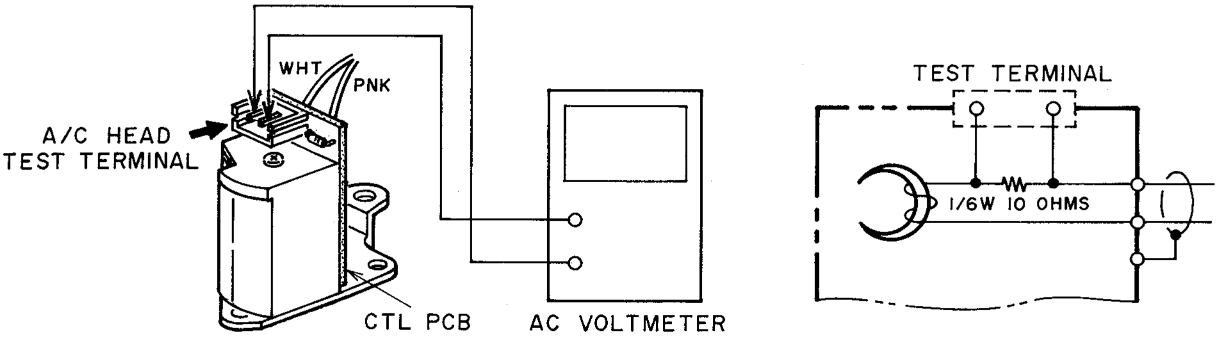


Fig. 8-4

IX. DC RESISTANCE OF VARIOUS COILS

Description			DC Resistance
REEL TABLE BRAKE			52Ω ± 10%
LOADING MOTOR	MXN-13AD12C		8.2Ω ± 10%
REEL MOTOR	JME2B-01		11Ω ± 10%
FULL ERASE HEAD			3.2Ω ± 10%
A/C HEAD	HV225813SVJ	AUDIO	270Ω ± 10%
		CONTROL	820Ω ± 10%
		ERASE	1.98Ω ± 10%
DRUM PG HEAD			7Ω ± 10%
DRUM FG COIL			1.5Ω ± 10%

X. PC BOARD TITLES AND IDENTIFICATION NUMBERS

PC Board Title		PC Board Number	Remarks
VIDEO	PC Board	V1030A5060 (3ED)	
DEMODULATOR	PC Board	V1030A5051 (2ED)	VIF PCB (6A00068A1) TUNER BLOCK
SERVO	PC Board	V1030A5070 (2ED)	
MECHA DRIVE	PC Board	V1030A5080 (3ED)	
POWER SUPPLY	PC Board	V1030A5092 (2ED)	
OPERATION	PC Board	V1027A5020 (2ED)	
SENSOR (T)	PC Board	V1030D5020	
SENSOR LED	PC Board	V1030D5350	
CASSETTE SW	PC Board	V1030D5320	
SWITCH (EJ)	PC Board	V1030D5190	
SENSOR (L)	PC Board	V1030D5140	
SENSOR (R)	PC Board	V1030D5150	
SENSOR (S)	PC Board	V1030D5340	
SLEEP	PC Board	V1027D5090	
MOTOR	PC Board	M3220D5010	
A/C HEAD	PC Board	V1030D5180	
JUNCTION (A)	PC Board	V1030A5040	
FULL ERASE	PC Board	V1030D5170	
SELECTOR	PC Board	V1027C5030	EO model
SELECTOR	PC Board	V1027C5031	EG model
SELECTOR	PC Board	V1027C5042	EA model
SELECTOR	PC Board	V1027C5050	EV-M model
SELECTOR	PC Board	V1027C5041	ES model
SELECTOR	PC Board	V1027C5033	EZ model

SECTION 3

PARTS LIST

TABLE OF CONTENTS

RECOMMENDED SPARE PARTS LIST 65
1. HEAD DRUM BLOCK 66
2. CHASSIS MECHA BLOCK (1) 67
3. CHASSIS MECHA BLOCK (2) 68
4. EJECTOR BLOCK 69
5. PC BOARD BLOCK 70
6. VIDEO PC BOARD 70
7. SERVO PC BOARD 71
8. OPERATION PC BOARD 71
9. MECHA DRIVE PC BOARD 72
10. DEMODULATOR PC BOARD 72
11. VIF BLOCK 73
12. POWER SUPPLY PC BOARD 73
13. SELECTOR PC BOARD 73
14. ASSEMBLY BLOCK 74
15. FINAL ASSEMBLY BLOCK 75
16. REMOTE CONTROL TRANSMITTER RC-V603 75
INDEX 75

ATTENTION

1. When placing an order for parts, be sure to list the parts no. model no., and description. There are instances in which if any of this information is omitted, parts cannot be shipped or the wrong parts will be delivered.
2. Please be careful not to make a mistake in the parts no. If the parts no. is in error, a part different from the one ordered may be delivered.
3. Because parts number and parts unit supply in the Preliminary Parts List may be partially changed, please use this parts list for all future reference.

HOW TO USE THIS PARTS LIST

1. This Parts List shows the parts that are considered necessary for repairs. Other parts, such as resistors and capacitors, are shown in the "Common List for Service Parts". Select and order such parts from the "Common List for Service Parts".
2. The Recommended Spare Parts shows those parts in the Parts List which are considered particularly important for service.
3. Parts not shown in the Parts List and "Common List for Service Parts" will not be supplied in principle.
4. How to read list
   a) Mechanism Block
   b) P.C Board Block

2. HEAD BASE BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
2-1x	BH-T2023A320A	HEAD BASE BLOCK GX-F66R
2-2	HP-H2206A010A	HEAD R/P PR4-8FU C
2-3	ZS-477876	PAN20x03STL CMT
2-4	ZS-536488	BID20x08STL CMT
2-5	ZG-402895	CS ANGLE ADJUST SPRING

SP (Service Parts) Classification

A small "x" indicates the inability to show that particular part in the Photo or Illustration.

This number corresponds with the individual parts index number in that figure

This number corresponds with the Figure Number

6. SYS. CON. P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
6-1	BA-T2034A070A	PC SYS CON BLK GX-F44R
6-IC1	EI-324536	IC HD14049BP
6-IC2	EI-336801	IC MB8841-564M
6-IC3	EI-331661	IC SN7405N
6-IC4	EI-336725	IC M54527P
6-TR1to4	ET-200985	TR 2SC2603 F,G
6-TR5to28	ET-554657	TR 2SA733A P,Q
6-D1	ED-318292	D SILICON H 1S2473T-77 T26
6-D2to4	ED-308952	D GERMA V 1K34A-LR F07
6-D5to10	ED-318292	D SILICON H 1S2473T-77 T26
6-X1	EI-318384	OSC X'TAL NC-18C 3.579545MHZ

SP (Service Parts) Classification

This reference numbers corresponds with symbol numbers of Schematic Diagrams.

5. Both the kind of part and installation position can be determined by the Parts Number. To determine where a parts number is listed, utilize Parts Index at end of Parts List. It is necessary first of all to find the Parts Number. This can be accomplished by using the Reference Number listed at right of parts number in the Parts Index.

WARNING

⚠ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.

AVERTISSEMENT

⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SURETE. POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL NE REMPLACER LES COMPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT.

RECOMMENDED SPARE PARTS LIST

Because, if the parts listed below are on hand, almost any repair can be accomplished, we suggest that you stock these Recommended Spare Parts Items.

NO.		PARTS NO.	DESCRIPTION
1		BA-M3220A020A	PC MOTOR BLK SM-200
2		BL-B353110	ARM IDLER (1) PART VS-603
3		BM-353630	CAPSTAN MOTOR DDV6-20A
4		BM-353657	REEL MOTOR JME2B01
5		BM-B353329	YOKE MAGNET PART
6		BR-B352383A	REEL TABLE COMP PART VS-603
7	N	BT-353936	⚠ TRANS POWER V1027 EG 220-110 [EG]
8		BT-356595	⚠ TRANS POWER V1027 EO 220 [EO]
9	N	BT-354342	⚠ TRANS POWER V1027 ES 250-220 [ES]
10		BT-356594	⚠ TRANS POWER V1027 EZ 230-115 [EZ,EV-M]
11		BT-357703	⚠ TRANS POWER V1030EK 240-200 [EA]
12		BV-V1030A100A	LOADING DRIVE BLK VS-603
13		BV-V1030A210B	LOWER DRUM BLK VS-303
14		BV-V1030A030A	PINCH ROLLER BLK VS-603
15		BV-353841	RF CONVERTER SW MSL5-150 [EA]
16		BV-354879	RF CONVERTER/BOOSTOR MDL5-073 [EZ,EV-M]
17		BV-353839	RF CONVERTER/BOOSTOR MDL6-023 [EG]
18		BV-353840	RF CONVERTER/BOOSTOR MIL6-023 [ES]
19		BV-353842	RF CONVERTER/BOOSTOR MSL6-023 [EO]
20		BV-V1030A220D	UPPER DRUM BLK VS-303EG
21		EC-346765	C S-FIX H ECR-HA010A11 2.8-10
22		EC-346764	C S-FIX H ECR-HA020D11 4-20
23		ED-347776	D LED BG5608S GREEN
24		ED-347777	D LED BR5628S RED
25		ED-357540	D LED LN59
26		ED-356359	D LED PR5531L RED
27		ED-348462	D LED SL2221T GREEN
28		ED-353550	D SILICON DBA30C-K12 200/3.0A
29		ED-336805	D SILICON DS135D-KB1 200/1.0A
30	N	ED-337618	D SILICON DS135E-FB6 100/1.0A
31		ED-348990	D SILICON H DS446
32		ED-301911	D SILICON H DS448
33		ED-344280	D SILICON H GMA-01-FY2 F05
34		ED-523427	D SILICON H 1SS16
35		ED-624903	D SILICON H 1S2473
36		ED-347767	D SILICON V MC911 DOUBLE
37		ED-348205	D SILICON V MC931 DOUBLE
38		ED-319463	D SILICON 4B4B41 100/4.0A
39		ED-714603	D VARACTOR 1SV70-20FG
40		ED-356430	D ZENER H HZS8.2E F05 B2.B3
41		ED-331626	D ZENER H HZ3 B2
42		ED-346631	D ZENER H HZ36 3
43		ED-302269	D ZENER H HZ5 A2
44		ED-307610	D ZENER H HZ7 A2
45		ED-337266	D ZENER H HZ9 A1
46		ED-351392	D ZENER H HZ9 B [EA,EZ,EV-M]
47	N	EE-353831	TV TUNER CDE1-A10 [EG,EV-M]
48		EE-353833	TV TUNER CEE1-A07 [EO]
49	N	EE-353835	TV TUNER CSE1-025 [EA]
50	N	EE-353834	TV TUNER CZE1-024 [ES]
51	N	EE-356135	TV TUNER CZE1-032 [EZ]
52		EF-347968	⚠ FUSE ICP-F10 150V 0.4A
53		EF-346880	⚠ FUSE ICP-F15 150V 0.6A
54		EF-623103	⚠ FUSE SEMKO T 250V 1.00A [EG]
55		EF-601301	⚠ FUSE SEMKO T 250V 2.00A
56		EH-358801	DL EFD-BR124A13V
57		EH-353817	DL EFD-VN645A83F
58		EH-705499	FILTER CE SFE 5.5MHZ [EG,EO,EV-M,EA,EZ]
59		EH-705500	FILTER CE SFE 6MHZ [ES]
60		EH-705501	FILTER CE TPS 5.5MHZ [EG,EO,EV-M,EA,EZ]
61		EH-705502	FILTER CE TPS 6MHZ [ES]
62		EH-356067	FILTER LC BP GZV-322-1A 5.06MC
63		EH-356672	FILTER LC BP SLC2915 4.43MC
64		EH-354086	FILTER LC DL GYV-501-1T
65		EH-345113	FILTER LC LP LJ25LP3.4M01
66		EH-714626	FILTER SAW SAF36.9MZ70Z [EA]
67		EH-714625	FILTER SAW SAF38.9MZ70Z [EG,EO,EV-M,EZ]
68		EH-714627	FILTER SAW 38.9MW70Z [ES]
69		EI-353775	IC AN3990
70		EI-324203	IC AN6342N
71		EI-353478	IC AN6881
72		EI-353421	IC BA6229
73		EI-354399	IC BU4001B
74		EI-354400	IC BU4011B
75		EI-354401	IC BU4066B
76		EI-328593	IC HD14053BP
77		EI-347779	IC LA6393S
78		EI-353852	IC LA7016
79		EI-353697	IC LA7018
80		EI-353813	IC LA7031
81		EI-353814	IC LA7034
82		EI-355630	IC LA7035
83		EI-356370	IC LA7224
84		EI-353848	IC LA7808
85		EI-348111	IC LC4071B
86		EI-353867	IC LC4077
87		EI-357519	IC MB88301-A
88		EI-347773	IC MB88303M
89		EI-353851	IC MB88305-P
90		EI-353777	IC MB8841-1363J
91		EI-357091	IC MB88501-284M
92		EI-353783	IC MB88505-266M [EA,EZ]
93		EI-357092	IC MB88505-285M [EG,EO,ES,EV-M]
94		EI-337228	IC M5218LO
95		EI-356811	IC M5224P
96		EI-353893	IC M54565P
97		EI-355709	IC M54572L
98		EI-356381	IC STK5434
99		EI-714602	IC TA7337P
100		EI-705494	IC TA7607AP
101		EI-353475	IC μPC1504C
102		EI-353477	IC μPC1526C
103		EI-337530	IC μPC574J
104		EI-349372	OSC CE CSA4.00MG 4MHZ
105		EI-330256	OSC CE F85-006 4MHZ
106		EI-356371	OSC X'TAL MS-309 4.194304MHZ
107		EI-309878	OSC X'TAL 4.433619MHZ
108		EI-322347	OSC X'TAL 4.435571MHZ
109		EL-353625	PL CORD 8.0V 100MA 175/175
110		EL-353624	PL CORD 8.0V 100MA 235/235
111		EO-356442	COIL OSC 1 0512-071
112		EO-356372	COIL TUN 1 038-332 38KHZ
113		EO-353774	COIL TUN2 VS-B-P
114		EO-348934	COIL VARI 1 BF-2 90.0μH
115		EO-347786	COIL VARI 1 70KHZ
116		ER-345751	⚠ R FUSE ERD2FC S10 1/4W 15ROG
117		ES-354430	⚠ SW SLIDE 00220950 02-02-2N [EG,ES,EV-M]
118		ES-354308	SW LEAF MSW-1595C
119		ES-353653	SW MODE SGZA010001
120		ES-353622	SW PUSH EVQ-WU7001 02-2
121		ES-347048	SW PUSH SCL101P 1-01-02N
122		ES-353708	SW SLIDE SSY323 2-02-03N
123		ES-347755	SW TACT EVQ-QSE05T
124		ET-330717	PHOTO SENSOR NJL1644L
125		ET-353635	PHOTO SENSOR ON2160 Q.R.S
126		ET-318308	PHOTO SENSOR PN202S
127		ET-348898	TR FET 2SJ40 C,D,E
128		ET-356236	TR FET 2SK363 GR.BL
129		ET-308472	TR 2SA1115 E,F,G
130		ET-349882	TR 2SA1283 D,E
131		ET-356224	TR 2SA1286 G,H,J
132		ET-336845	TR 2SB641 Q,R,S,T
133		ET-356153	TR 2SB643 Q,R,S,T
134		ET-200401	TR 2SB788 S,T,U
135		ET-357546	TR 2SB895A P,Q,R
136		ET-321644	TR 2SC1213C
137		ET-306719	TR 2SC2236 O,Y
138		ET-308141	TR 2SC2603 G
139		ET-355669	TR 2SC3246 G,H,J
140		ET-352994	TR 2SC3401
141		ET-348948	TR 2SD1273 P,Q
142		ET-309434	TR 2SD636 Q,R,S,T
143		ET-200402	TR 2SD958 S,T,U
144		EV-356579	R S-FIX H H0615C 3P 102
145		EV-356577	R S-FIX H H0615C 3P 103
146		EV-357619	R S-FIX H H0615C 3P 104
147		EV-356575	R S-FIX H H0615C 3P 222
148		EV-356583	R S-FIX H H0615C 3P 332
149		EV-356576	R S-FIX H H0615C 3P 472
150		EV-336765	R S-FIX H H0621A 3P 0.30W 224
151		EV-336766	R S-FIX H H0621A 3P 0.30W 333
152		EV-336769	R S-FIX H H0621A 3P 0.30W 473
153		EV-307621	R S-FIX H H0651A 3P 0.05W 103
154		EV-342230	R S-FIX H H0651A 3P 0.05W 153
155		EV-356324	R S-FIX H KVSF637A 3P 103
156		EV-356324	R S-FIX H KVSF637A 3P 103
157		EV-353425	R S-FIX H RVF6P01 3P 103
158		EV-337949	R S-FIX H TM64K3 3P 0.30W 103
159		EV-713607	R S-FIX RVF6P01-103
160		EV-714599	R S-FIX RVF6P01-202
161		EV-336768	R S-FIX H H0621A 3P 0.30W 104
162		EX-330533	⚠ POSISTER PTH61G04BD3R3N
163		EX-355657	⚠ POSISTER PTH61G10BD6R8N
164		EX-357642	DEW SENSOR 922P52E500YC09-C
165	N	EX-357643	⚠ CIRCUIT PROTECTOR TBC6211-22-0472 [EV-M]
166		EZ-356237	BATTERY P-01H-F4N1
167		HC-353332	HEAD PU TP311
168		HE-325273	HEAD E HV113201 V
169		HR-353638	HEAD COMBO HV225813VJ
170		MP-357547	ROLLER PINCH 16×20
171		MZ-353166	GEAR (1)
172		MZ-353167	GEAR (2)
173		MZ-353168	GEAR (3)
174		MZ-353169	GEAR (4)
175		MZ-B353201	GEAR EJECT PART
176		MZ-B351526	GEAR EJECTOR (A) PART VS-603
177		MZ-353170	GEAR IDLER
178		MZ-351524	GEAR LOADING (L)
179		MZ-351525	GEAR LOADING (R)
180		MZ-B351529	GEAR MAIN PART VS-603
181		MZ-351527	GEAR RELAY
182		MZ-353364	GEAR WARM WHEEL

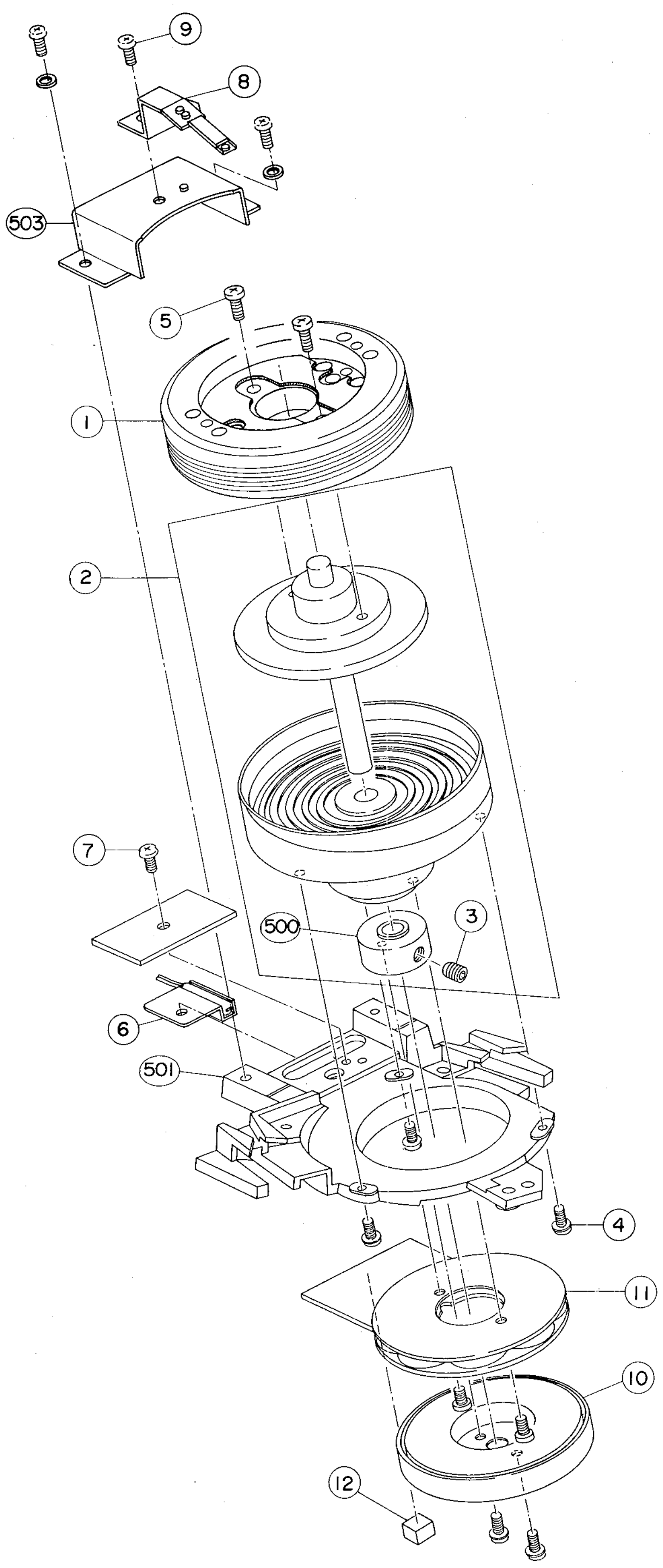
"NOTE" N: New Parts

1. HEAD DRUM BLOCK

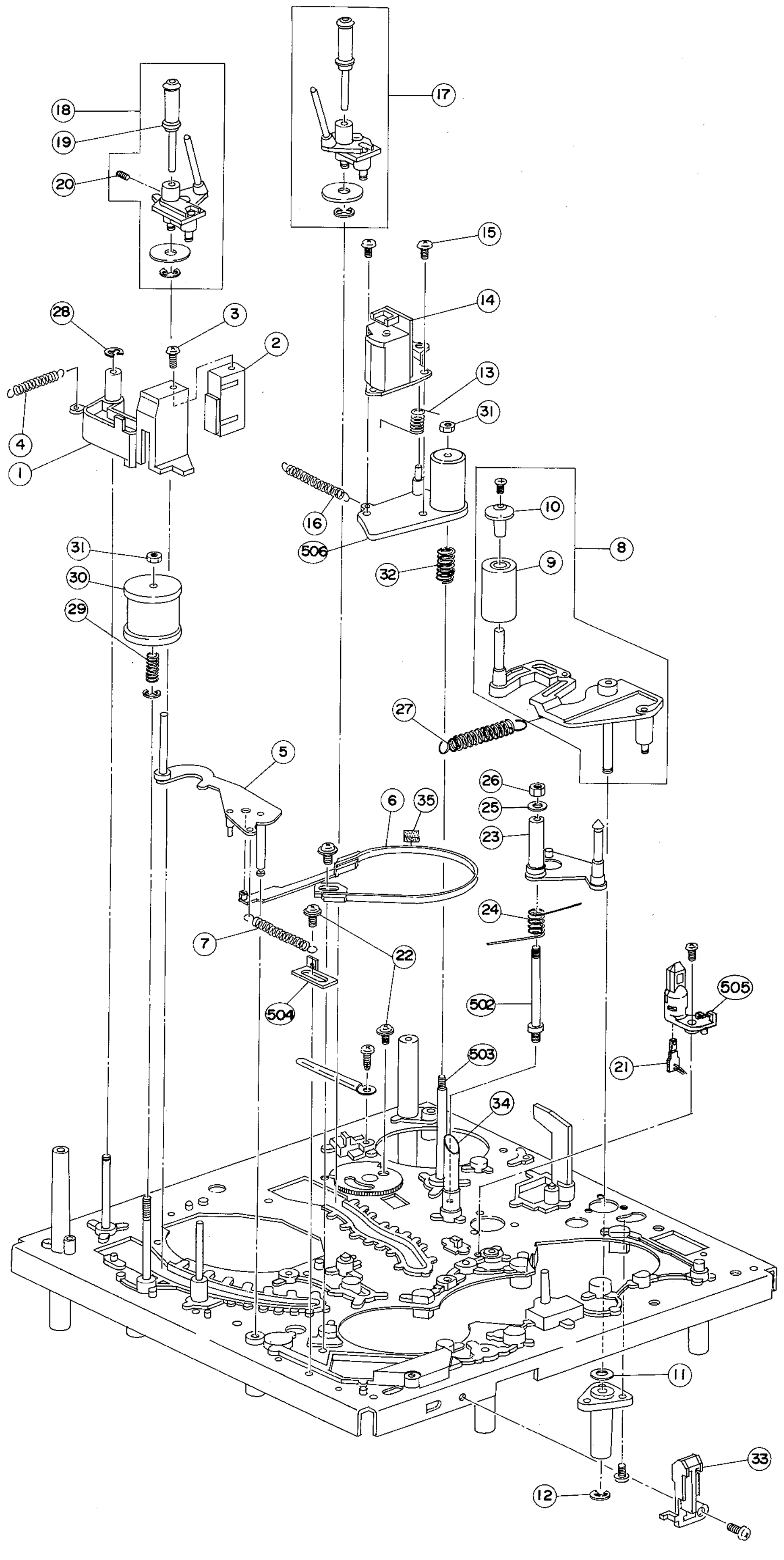
REF. NO.	PARTS NO.	DESCRIPTION
	HEAD DRUM BLOCK	
1-1	BV-V1030A220D	UPPER DRUM BLK VS-303EG
1-2	BV-V1030A210B	LOWER DRUM BLK VS-303
1-3	ZS-318206	6SET40×040SCM PKR WP
1-4	ZS-354332	PAN 26×08STL CMT SW
1-5	ZS-353268	BID30×10STL NI3
1-6	EX-357642	DEW SENSOR 922P52E500YC09-C
1-7	ZS-432843	PAN26×04STL CMT
1-8	VT-353655	DRUM EARTH SP ASSY (A)
1-9	ZS-432843	PAN26×04STL CMT
	MOTOR SM-200 BLOCK	
1-10	BM-B353329	YOKE MAGNET PART
1-11	BA-M3220A020A	PC MOTOR BLK SM-200
1-12	HC-353332	HEAD PU TP311
1-D1	ED-356430	D ZENER H HZS8.2E F05 B2.B3 [MOTOR PC BOARD]

NOTE: Parts listed in 1 to D1 on the exploded view and list are normaly stocked for replacement purpose. The remaining parts shown in this manual are not normaly stocked, because they are seldom required for routine service.

HEAD DRUM BLOCK



CHASSIS MECHA BLOCK (1)



2. CHASSIS MECHA BLOCK (1)

REF. NO.	PARTS NO.	DESCRIPTION
2-1	ML-353146	ARM FE HEAD
2-2	HE-325273	HEAD E HV113201 V
2-3	ZS-460440	PAN20x04STL CMT
2-4	ZG-357866	SP T6-04.0/0.40-20.0 T6-113
2-5	BL-B353122	LEVER TENSION PART VS-603
2-6	BV-B352377	ARM TENSION BAND PART VS-603
2-7	ZG-357769	SP T2-4.0/0.4-31.5 T2-117
2-8	BV-V1030A030A	PINCH ROLLER BLK VS-603
2-9	MP-357547	ROLLER PINCH 16x20
2-10	SR-357552	CAP PINCH ROLLER
2-11	ZW-259738	PW41x070x025PSL
2-12	ZW-270101	RING E300SUP CMT
2-13	ZG-313261	SP C-04.5/1.00-08.0 C-105
2-14	HR-353638	HEAD COMBO HV225813VJ
2-15	ZS-379350	PAN30x06STL CMT
2-16	ZG-321598	SP T2-06.3/0.80-31.5 T2-199
2-17	VT-V1030A080A	LOADING LEADER (R) BLK VS-603
2-18	VT-V1030A090A	LOADING LEADER (L) BLK VS-603
2-19	VT-353658	VERTICAL POLE
2-20	ZS-302938	6SET20x030SCM PKR WP
2-21	ED-357540	D LED LN59
2-22	ZS-328607	TRIPLE SCREW PAN30x05
2-23	BL-B357555	LEVER REVIEW PART VS-603
2-24	ZG-357559	SP TORSION REV
2-25	ZW-324417	PW31x060x050PSL
2-26	ZW-350839	NYLON NUT M3
2-27	ZG-353626	SP PULL PINCH
2-28	ZW-357164	RING E230SUP CMT
2-29	ZG-353627	SP PUSH ROLLER IMPEDANCE
2-30	MI-B353148	GUIDE IMPEDANCE PART VS-603
2-31	ZW-516993	N30STL CMT 1
2-32	ZG-313209	SP C-05.5/0.80-12.5 C-054
2-33	ES-354308	SW LEAF MSW-1595C
2-34	MH-357860	PROP 9 GUIDE TAPE (B)
2-35	MB-357976	CUSHION WALL

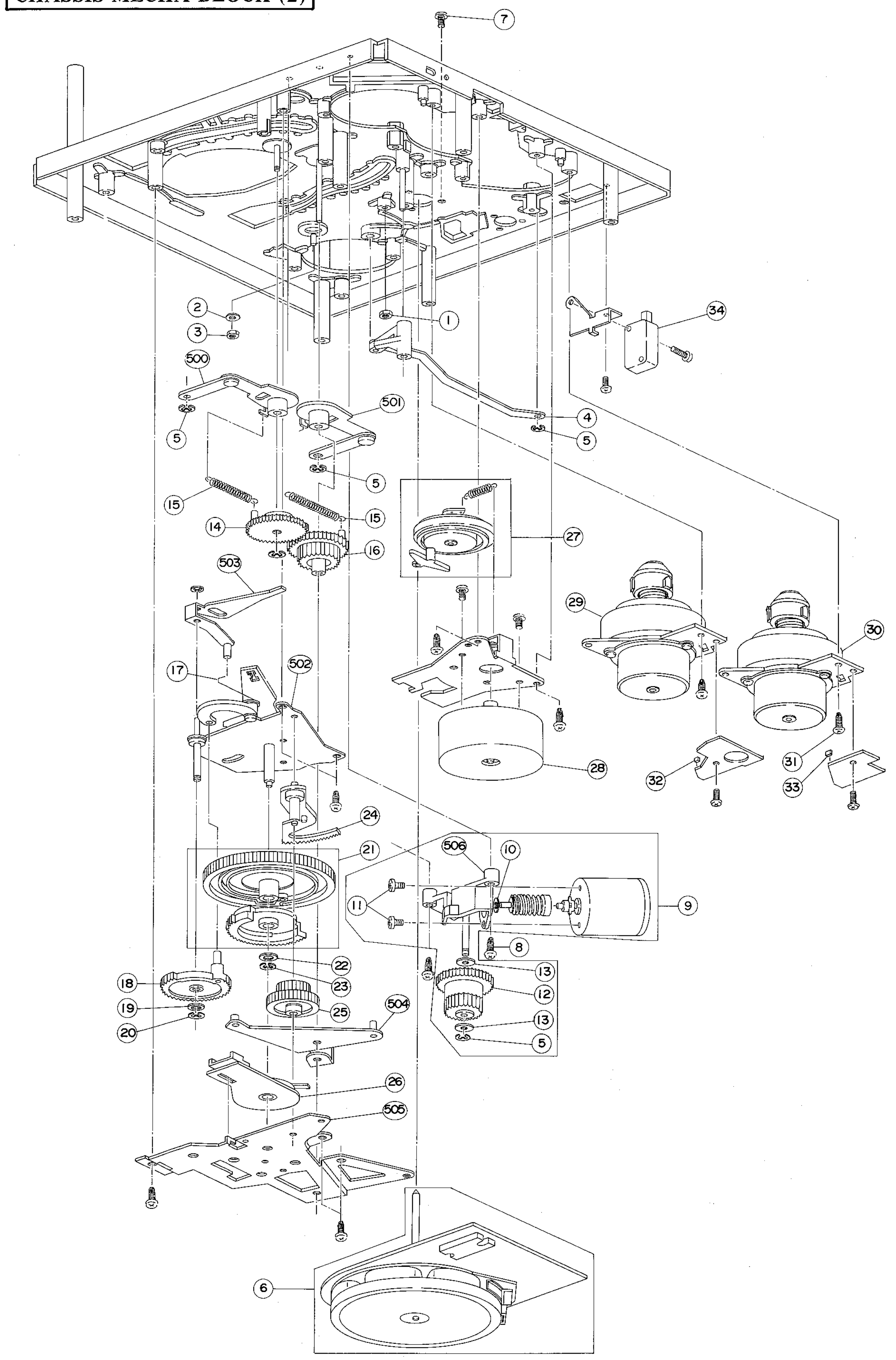
NOTE: Parts listed in 1 to 35 on the exploded view and list are normaly stocked for replacement purpose. The remaining parts shown in this manual are not normaly stocked, because they are seldom required for routine service.

3. CHASSIS MECHA BLOCK (2)

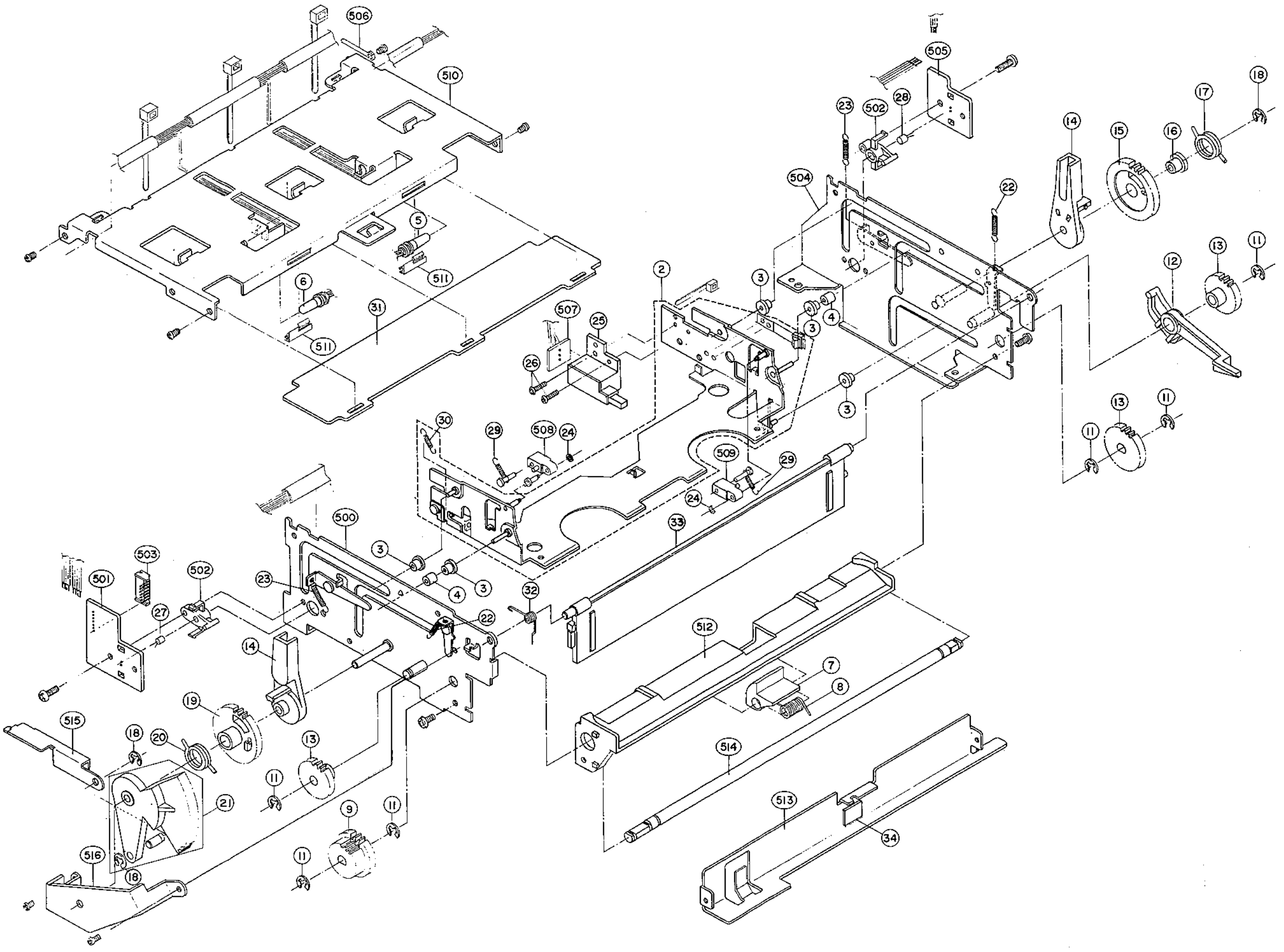
REF. NO.	PARTS NO.	DESCRIPTION
3-1	ZS-609434	N FLANGE 30STL CMT
3-2	ZW-381881	PW41×130×100STL CMT
3-3	ZW-413188	N40STL CMT 1
3-4	BL-B353126	LEVER PINCH ROLLER LINK PART VS-603
3-5	ZW-357164	RING E230SUP CMT
3-6	BM-353630	CAPSTAN MOTOR DDV6-20A
3-7	ZS-608220	PAN26×06STL CMT
3-8	ZS-417194	BID30×10STL CMT
3-9	BV-V1030A100A	LOADING DRIVE BLK VS-603
3-10	ZW-354346	PW21×060×025PBR
3-11	ZS-422076	PAN30×05STL CMT
3-12	MZ-353364	GEAR WARM WHEEL
3-13	ZW-288797	PW31×070×025PSL
3-14	MZ-351524	GEAR LOADING (L)
3-15	ZG-353648	SP PULL
3-16	MZ-351525	GEAR LOADING (R)
3-17	ZG-356682	SP TORSION
3-18	MZ-B351526	GEAR EJECTOR (A) PART VS-603
3-19	ZW-259738	PW41×070×025PSL
3-20	ZW-270101	RING E300SUP CMT
3-21	MZ-B351529	GEAR MAIN PART VS-603
3-22	ZW-353647	PW 50×090×025PSL
3-23	ZW-270123	RING E400SUP CMT
3-24	ML-B351942	LEVER LOADING GEAR PART VS-603
3-25	MZ-351527	GEAR RELAY
3-26	ES-353653	SW MODE SGZA010001
3-27	BL-B353110	ARM IDLER (1) PART VS-603
3-28	BM-353657	REEL MOTOR JME2B01
3-29	BR-B352383A	REEL TABLE COMP PART VS-603
3-30	BR-B352383A	REEL TABLE COMP PART VS-603
3-31	ZS-354402	PT PAN26×10STL CMT
3-32	ET-353635	PHOTO SENSOR ON2160 Q.R.S
3-33	ET-353635	PHOTO SENSOR ON2160 Q.R.S
3-34	ES-347048	SW PUSH SCL101P 1-01-02N

NOTE: Parts listed in 1 to 34 on the exploded view and list are normaly stocked for replacement purpose. The remaining parts shown in this manual are not normaly stocked, because they are seldom required for routine service.

CHASSIS MECHA BLOCK (2)



EJECTOR BLOCK



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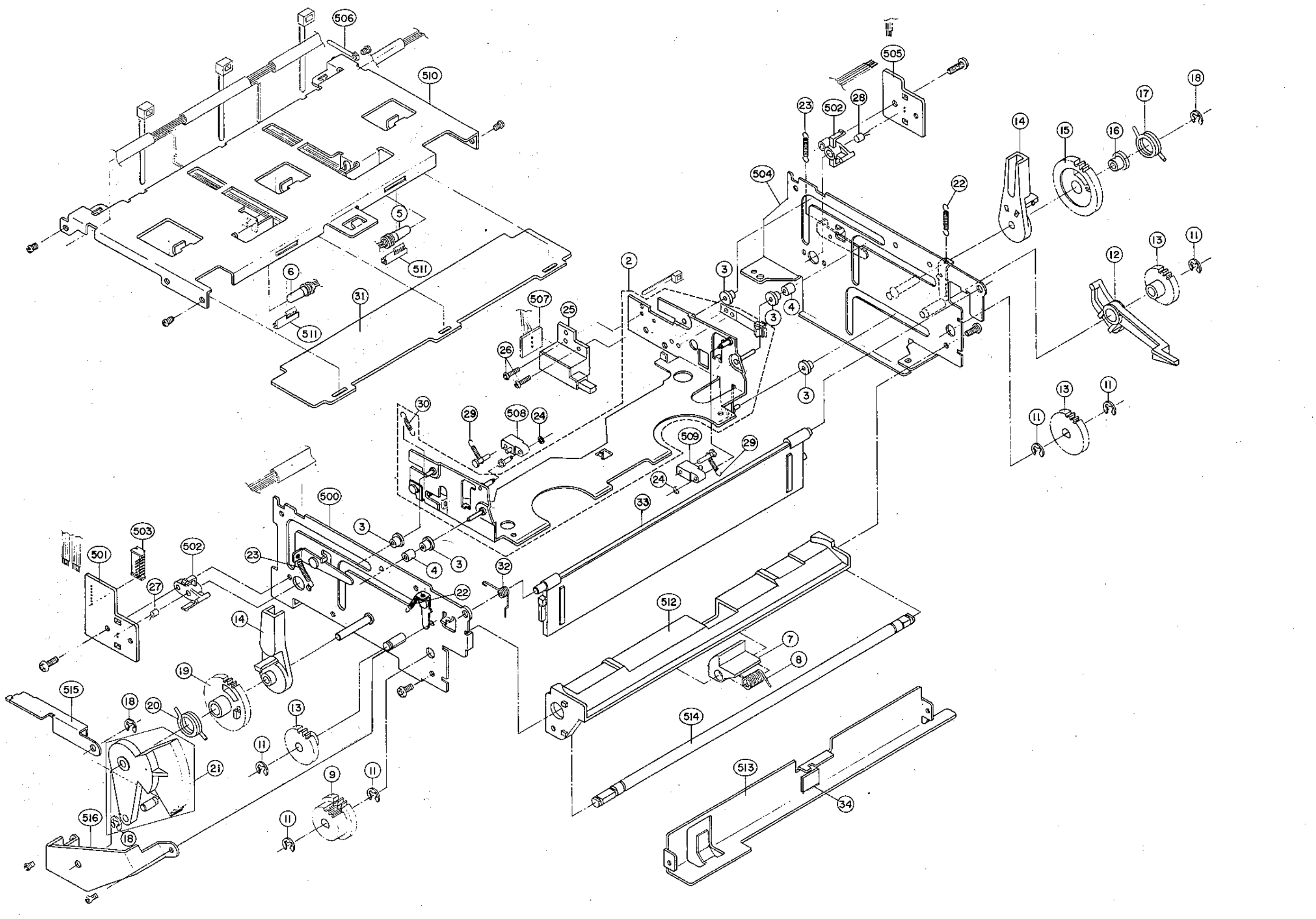
4. EJECTOR BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
4-1	BV-V1030A250A	EJECTOR BLK VS-603
4-2	MZ-B353211	HOLDER CASSETTE PART
4-3	MR-353164	ROLLER (1)
4-4	MR-353165	ROLLER (2)
4-5	EL-353624	PL CORD 8.0V 100MA 235/235
4-6	EL-353625	PL CORD 8.0V 100MA 175/175
4-7	MZ-355643	STOPPER (C)
4-8	ZG-353204	SP TORSION (B)
4-9	MZ-353166	GEAR (1)
4-10	MZ-353167	GEAR (2)
4-11	ZW-270123	RING E400SUP CMT
4-12	ML-353161	ARM OPENER
4-13	MZ-353170	GEAR IDLER
4-14	ML-353162	ARM LOADING
4-15	MZ-353169	GEAR (4)
4-16	MZ-353163	COLLAR
4-17	ZG-353205	SP TORSION (A)
4-18	ZW-270101	RING E300SUP CMT
4-19	MZ-353168	GEAR (3)
4-20	ZG-356911	SP TORSION (L)
4-21	MZ-B353201	GEAR EJECT PART
4-22	ZG-357753	SP T4-04.0/0.40-12.5 T5-109

REF. NO.	PARTS NO.	DESCRIPTION
4-23	ZG-357158	SP T5-05.0/0.55-20.0 T5-156
4-24	ZW-343120	PW17x040x025PSL
4-25	ES-353622	SW PUSH EVQ-WU7001 02-2
4-26	ZS-417216	PAN30x04STL CMT
4-27	ET-318308	PHOTO SENSOR PN202S
4-28	ET-318308	PHOTO SENSOR PN202S
4-29	ZG-357864	SP T5-03.2/0.45-12.5 T5-075
4-30	ZG-357865	SP T5-04.0/0.40-11.2 T5-108
	ASSEMBLY BLOCK	
4-31	SP-353210	PLATE MIRROR
4-32	ZG-353206	SP TORSION MASK CASSETTE
4-33	SP-353040D	MASK CASSETTE (UL)
4-34	MB-357511	CUSHION PC (1)

NOTE: Parts listed in 1 to 34 on the exploded view and list are normaly stocked for replacement purpose. The remaining parts shown in this manual are not normaly stocked, because they are seldom required for routine service.

EJECTOR BLOCK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4. EJECTOR BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
4-1	BV-V1030A250A	EJECTOR BLK VS-603
4-2	MZ-B353211	HOLDER CASSETTE PART
4-3	MR-353164	ROLLER (1)
4-4	MR-353165	ROLLER (2)
4-5	EL-353624	PL CORD 8.0V 100MA 235/235
4-6	EL-353625	PL CORD 8.0V 100MA 175/175
4-7	MZ-355643	STOPPER (C)
4-8	ZG-353204	SP TORSION (B)
4-9	MZ-353166	GEAR (1)
4-10	MZ-353167	GEAR (2)
4-11	ZW-270123	RING E400SUP CMT
4-12	ML-353161	ARM OPENER
4-13	MZ-353170	GEAR IDLER
4-14	ML-353162	ARM LOADING
4-15	MZ-353169	GEAR (4)
4-16	MZ-353163	COLLAR
4-17	ZG-353205	SP TORSION (A)
4-18	ZW-270101	RING E300SUP CMT
4-19	MZ-353168	GEAR (3)
4-20	ZG-356911	SP TORSION (L)
4-21	MZ-B353201	GEAR EJECT PART
4-22	ZG-357753	SP T4-04.0/0.40-12.5 T5-109
4-23	ZG-357158	SP T5-05.0/0.55-20.0 T5-156
4-24	ZW-343120	PW17×040×025PSL
4-25	ES-353622	SW PUSH EVQ-WU7001 02-2
4-26	ZS-417216	PAN30×04STL CMT
4-27	ET-318308	PHOTO SENSOR PN202S
4-28	ET-318308	PHOTO SENSOR PN202S
4-29	ZG-357864	SP T5-03.2/0.45-12.5 T5-075
4-30	ZG-357865	SP T5-04.0/0.40-11.2 T5-108

ASSEMBLY BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
4-31	SP-353210	PLATE MIRROR
4-32	ZG-353206	SP TORSION MASK CASSETTE
4-33	SP-353040D	MASK CASSETTE (UL)
4-34	MB-357511	CUSHION PC (1)

NOTE: Parts listed in 1 to 34 on the exploded view and list are normaly stocked for replacement purpose. The remaining parts shown in this manual are not normaly stocked, because they are seldom required for routine service.

5. PC BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
5-1EG	BA-V1027A300A	PC VIDEO PAL BLK VS-303EG [EG/EO/EO(Y1)/EV-M/EZ)]
5-1EA	BA-V1027A300B	PC VIDEO PAL BLK VS-303EA
5-1ES	BA-V1027A300D	PC VIDEO PAL BLK VS-301EK
5-2EG	BA-V1027A320A	PC SERVO (PAL) BLK VS-303EG [EG/EO/EO(Y1)/ES]
5-2EA	BA-V1027A320B	PC SERVO (PAL) BLK VS-303EA [EA/EV-M/EZ]
5-3EG	BA-V1027A330B	PC OPERATION BLK VS-301EK [EG/EO/EO(Y1)/ES]
5-3EA	BA-V1027A330C	PC OPERATION BLK VS-303EA [EA/EV-M/EZ]
5-4	BA-V1030A370C	PC MECHA DRIVE BLK VS-301EK
5-5EG	BA-V1030A350D	PC DEMODULATOR BLK VS-303EG
5-5EA	BA-V1030A350C	PC DEMODULATOR BLKK VS-303EA
5-5EO	BA-V1030A350E	PC DEMODULATOR BLK VS-303EO [EO/EO(Y1)]
5-5ES	BA-V1030A350F	PC DEMODULATOR BLK VS-303ES
5-5EVM	BA-V1030A350M	PC DEMODULATOR BLK VS-303EV-M [EV-M]
5-5EZ	BA-V1030A350G	PC DEMODULATOR BLK VS-303EZ
5-6EG	BV-V1030A900B	VIF BLK VS-301EG-G [EG/EV-M]
5-6EA	BV-V1030A900C	VIF BLK VS-303EA
5-6EO	BV-V1030A900D	VIF BLK VS-303EO
5-6ES	BV-V1030A900E	VIF BLK VS-303ES
5-6EZ	BV-V1030A900F	VIF BLK VS-303EZ

NOTE: PC DEMODULATOR BLK consists of DEMODULATOR PC BOARD and VIF BLOCK.

6. VIDEO PC BOARD

REF. NO.	PARTS NO.	DESCRIPTION
6-IC1	EI-353814	IC LA7034
6-IC2	EI-353813	IC LA7031
6-IC3	EI-355630	IC LA7035
6-IC4	EI-324203	IC AN6342N
6-IC5	EI-328593	IC HD14053BP
6-IC6	EI-353697	IC LA7018
6-IC501	EI-353775	IC AN3990
6-IC502	EI-353852	IC LA7016
6-TR1	ET-308141	TR 2SC2603 G
6-TR2	ET-308472	TR 2SA1115 E,F,G
6-TR3to5	ET-308141	TR 2SC2603 G
6-TR6to8	ET-308472	TR 2SA1115 E,F,G
6-TR9to12	ET-308141	TR 2SC2603 G
6-TR13	ET-321644	TR 2SC1213 C
6-TR14,15	ET-308472	TR 2SA1115 E,F,G
6-TR16,17	ET-308141	TR 2SC2603 G
6-TR18	ET-308472	TR 2SA1115 E,F,G
6-TR19to22	ET-308141	TR 2SC2603 G
6-TR23	ET-308472	TR 2SA1115 E,F,G
6-TR24,25	ET-308141	TR 2SC2603 G
6-TR28	ET-352994	TR 2SC3401
6-TR29,31	ET-308141	TR 2SC2603 G
6-TR32	ET-308472	TR 2SA1115 E,F,G
6-TR33,34	ET-308141	TR 2SC2603 G
6-TR35	ET-352994	TR 2SC3401
6-TR36,37	ET-308141	TR 2SC2603 G
6-TR38	ET-308141	TR 2SC2603 G [EG/EO/EO(Y1)/EV-M/EZ]
6-TR40to42	ET-308141	TR 2SC2603 G
6-TR43	ET-308472	TR 2SA1115 E,F,G
6-TR44,45	ET-356224	⚠ TR 2SA1286 G,H,J
6-TR46	ET-308141	TR 2SC2603 G
6-TR47	ET-352994	TR 2SC3401
6-TR48	ET-308472	TR 2SA1115 E,F,G
6-TR50	ET-308472	TR 2SA1115 E,F,G [EG/EO/EO(Y1)/EV-M/EZ]
6-TR51	ET-308141	TR 2SC2603 G
6-TR501to503	ET-308141	TR 2SC2603 G
6-TR504	ET-200401	TR 2SB788 S,T,U
6-TR505,506	ET-200402	TR 2SD958 S,T,U
6-TR507,508	ET-308141	TR 2SC2603 G
6-D1,2	ED-344280	D SILICON H GMA-01-FY2 F05
6-D3	ED-523427	D SILICON H 1SS16
6-D4to9	ED-344280	D SILICON H GMA-01-FY2 F05
6-D11to15	ED-344280	D SILICON H GMA-01-FY2 F05
6-D501to506	ED-344280	D SILICON H GMA-01-FY2 F05
6-D510	ED-344280	D SILICON H GMA-01-FY2 F05
6-VR1	EV-356575	R S-FIX H H0615C 3P 222
6-VR2	EV-356576	R S-FIX H H0615C 3P 472
6-VR3,4	EV-356575	R S-FIX H H0615C 3P 222
6-VR5to7	EV-356577	R S-FIX H H0615C 3P 103
6-VR8	EV-337949	R S-FIX H TM64K3 3P 0.30W 103
6-VR9,10	EV-356579	R S-FIX H H0615C 3P 102
6-VR11	EV-356576	R S-FIX H H0615C 3P 472
6-VR12	EV-356579	R S-FIX H H0615C 3P 102
6-VR13	EV-337949	R S-FIX H TM64K3 3P 0.30W 103
6-VR501	EV-356577	R S-FIX H H0615C 3P 103
6-VR502,503	EV-356583	R S-FIX H H0615C 3P 332
6-VR504	EV-357619	R S-FIX H H0615C 3P 104
6-FL1	EH-345113	FILTER LC LP LJ25LP3.4M01
6-FL2	EH-356672	FILTER LC BP SLC2915 4.43MC
6-FL3	EH-356067	FILTER LC BP GZV-322-1A 5.06MC
6-FL4	EH-354086	FILTER LC DL GYV-501-1T [EXCEPT ES]
6-FL501	EO-353774	COIL TUN2 VS-B-P
6-FL502	EO-347786	COIL VARI 1 70KHZ
6-DL1	EH-353817	DL EFD-VN645A83F
6-DL2	EH-358801	DL EFD-BR124A13V
6-L1	EO-351860	COIL FIX 1 LAL02 F05 8R2K
6-L2	EO-351865	COIL FIX 1 LAL02 F05 330J
6-L3,4	EO-330241	COIL FIX 1 EL0606SKI 221K
6-L5,6	EO-351865	COIL FIX 1 LAL02 F05 330J
6-L7	EO-351864	COIL FIX 1 LAL02 F05 220J
6-L8	EO-330241	COIL FIX 1 EL0606SKI 221K
6-L9	EO-351869	COIL FIX 1 LAL02 F05 820K
6-L10,11	EO-351868	COIL FIX 1 LAL02 F05 470K
6-L12	EO-330241	COIL FIX 1 EL0606SKI 221K
6-L13	EO-351867	COIL FIX 1 LAL02 F05 390K
6-L14,15	EO-353900	COIL FIX 1 LAL02 F05 150K
6-L16,17	EO-357507	COIL FIX 1 LAL02 F05 121K
6-L18	EO-354600	COIL FIX 1 LAL02 F05 101K
6-L19	EO-351865	COIL FIX 1 LAL02 F05 330J
6-L20	EO-353900	COIL FIX 1 LAL02 F05 150K
6-L21	EO-351869	COIL FIX 1 LAL02 F05 820K
6-L22,23	EO-330241	COIL FIX 1 EL0606SKI 221K
6-L24	EO-351865	COIL FIX 1 LAL02 F05 330J
6-L25to27	EO-330241	COIL FIX 1 EL0606SKI 221K
6-L28	EO-351869	COIL FIX 1 LAL02 F05 820K
6-L29	EO-357508	COIL FIX 1 LAL02 F05 151K
6-L30	EO-330241	COIL FIX 1 EL0606SKI 221K
6-L31	EO-353900	COIL FIX 1 LAL02 F05 150K
6-L32	EO-357852	COIL FIX1 ELF0708SKI 152K
6-L34	EO-357507	COIL FIX 1 LAL02 F05 121K
6-L35	EO-357509	COIL FIX 1 LAL02 F05 181K
6-L36	EO-330241	COIL FIX 1 EL0606SKI 221K
6-L37	EO-353902	COIL FIX 1 LAL02 F05 680K
6-L38	EO-330241	COIL FIX 1 EL0606SKI 221K
6-L39	EO-351868	COIL FIX 1 LAL02 F05 470K
6-L40	EO-356688	COIL FIX 1 ELF0708SKI 822K
6-L41,42	EO-330241	COIL FIX 1 EL0606SKI 221K
6-L43	EO-353900	COIL FIX 1 LAL02 F05 150K
6-L44	EO-351864	COIL FIX 1 LAL02 F05 220J
6-L45	EO-353901	COIL 1 LAL02 F05 560K
6-L46	EO-354600	COIL FIX 1 LAL02 F05 101K
6-L501	EO-321254	COIL FIX 1 FL07H 562J
6-L502	EO-443722	COIL FIX 1 FL09H 102J
6-OSC501	EO-356442	COIL OSC 1 0512-071

REF. NO.	PARTS NO.	DESCRIPTION
6-X1	EI-309878	OSC X'TAL 4.433619MHZ
6-X2	EI-322347	OSC X'TAL 4.435571MHZ
6-VC1	EC-346764	C S-FIX H ECR-HA020D11 4-20
6-VC2	EC-346765	C S-FIX H ECR-HA010A11 2.8-10
6-C3	EC-200949	C EC V F05 NP SM 470M 10DC
6-C5	EC-332052	C EC V F05 NP SM 4R7M 35DC
6-C11,13	EC-200949	C EC V F05 NP SM 470M 10DC
6-C21	EC-332052	C EC V F05 NP SM 4R7M 35DC
6-1A	EJ-354210	JACK PLATE VIDEO EG303 [EG/ED/EO(Y1)/EV-M/EZ]
6-1B	EJ-353426	JACK PLATE VIDEO EA303 [EA/ES]
6-2	ZS-356677	DELL TIGHT BR30×06STL BLUE [PC BOARD SET SCREW]
6-3	ZS-356675	PLX BR30×10STL BLUE [PC BOARD SET SCREW]
6-4	ZS-357528	DELL TIGHT BR30×08STL CMT [PC BOARD SET SCREW]

7. SERVO PC BOARD

REF. NO.	PARTS NO.	DESCRIPTION
7-IC1	EI-353777	IC MB8841-1363J
7-IC2	EI-353867	IC LC4077
7-IC3	EI-354400	IC BU4011B
7-IC4	EI-354401	IC BU4066B
7-IC5	EI-353475	IC μPC1504C
7-IC6	EI-353477	IC μPC1526C
7-IC7	EI-337228	IC M5218L0
7-IC8	EI-354401	IC BU4066B
7-IC9	EI-353478	IC AN6881
7-IC10	EI-337228	IC M5218L0
7-IC11	EI-347779	IC LA6393S
7-IC12	EI-353478	IC AN6881
7-IC13,14	EI-337228	IC M5218L0
7-TR1	ET-308141	TR 2SC2603 G
7-TR2	ET-308472	TR 2SA1115 E,F,G
7-TR3	ET-356224	⚠ TR 2SA1286 G,H,J
7-TR4	ET-308141	TR 2SC2603 G
7-TR5	ET-308472	TR 2SA1115 E,F,G
7-TR6,7	ET-308141	TR 2SC2603 G
7-TR8,9	ET-308472	TR 2SA1115 E,F,G
7-TR10,11	ET-308141	TR 2SC2603 G
7-TR12	ET-356224	⚠ TR 2SA1286 G,H,J
7-TR14	ET-308141	TR 2SC2603 G
7-TR15	ET-308472	TR 2SA1115 E,F,G
7-TR16	ET-308141	TR 2SC2603 G
7-TR17	ET-308472	TR 2SA1115 E,F,G
7-TR18to20	ET-308141	TR 2SC2603 G
7-TR21	ET-356224	TR 2SA1286 G,H,J
7-TR22	ET-308141	TR 2SC2603 G
7-D1to21	ED-344280	D SILICON H GMA-01-FY2 F05
7-VR1	EV-336768	R S-FIX H H0621A 3P 0.30W 104
7-VR2	EV-336766	R S-FIX H H0621A 3P 0.30W 333
7-VR3,4	EV-336765	R S-FIX H H0621A 3P 0.30W 224
7-VR5	EV-336768	R S-FIX H H0621A 3P 0.30W 104
7-VR6	EV-336769	R S-FIX H H0621A 3P 0.30W 473
7-VR7	EV-342230	R S-FIX H H0651A 3P 0.05W 153
7-VR9	EV-307621	R S-FIX H H0651A 3P 0.05W 103
7-X1	EI-349372	OSC CE CSA4.00MG 4MHZ
7-IB1	EH-356692	COMP R RKC1/8B6 47KJ
7-R16	ER-336754	R MF H F05 1/6W 2002F
7-R17	ER-343997	R MF H F05 1/6W 2001F
7-R19	ER-340545	R MF H F05 1/6W 2701F
7-R33	ER-340542	R MF H F05 1/6W 7202F
7-R34,35	ER-337338	R MF H F05 1/6W 6202F
7-R36	ER-200381	R MF H F05 1/6W 1003F
7-R37	ER-340541	R MF H F05 1/6W 2203F
7-R66	ER-200522	R MF H F05 1/6W 2201F
7-R67	ER-349195	R MF H F05 1/6W 6201F
7-R68	ER-356574	R MF H F05 1/6W 1603F
7-R132	ER-357567	R MF H F10 1/4W 1R00F
7-CN1	EH-357597	COMP C B8×C0114-32N
7-C48	EC-300193	C EC V F05 NP SM 100M 16DC
7-C73	EC-332052	C EC V F05 NP SM 4R7M 35DC
7-1	EJ-347842	SOCKET IC S-I2479 P 42P
7-2	ZS-356677	DELL TIGHT BR30×06STL BLUE [PC BOARD SET SCREW]
7-3	ZS-356676	PLX BR30×08STL BLUE [PC BOARD SET SCREW]

8. OPERATION PC BOARD

REF. NO.	PARTS NO.	DESCRIPTION
8-IC1	EI-357091	IC MB88501-284M
8-IC2	EI-353893	IC M54565P
8-IC3	EI-354399	IC BU4001B
8-IC4	EI-348111	IC LC4071B
8-IC5	EI-356370	IC LA7224
8-TR1,2	ET-336845	TR 2SB641 Q,R,S,T
8-TR3,4	ET-356153	TR 2SB643 Q,R,S,T
8-TR7,8	ET-309434	TR 2SD636 Q,R,S,T
8-D1	ED-347777	D LED BR5628S RED
8-D2,3	ED-347776	D LED BG5608S GREEN
8-D4to7	ED-347777	D LED BR5628S RED
8-D8	ED-356359	D LED PR5531L RED [EA,EV-M,EZ]
8-D11	ED-356359	D LED PR5531L RED
8-D14	ED-348462	D LED SL2221T GREEN
8-D16	ED-348990	D SILICON H DS446
8-D17to20	ED-344280	D SILICON H GMA-01-FY2 F05
8-D21	ET-330717	PHOTO SENSOR NJL1644L
8-D22	ED-344280	D SILICON H GMA-01-FY2 F05
8-D23	ED-624903	D SILICON H 1S2473
8-SW1	ES-353708	SW SLIDE SSY323 2-02-03N
8-SW2to20	ES-347755	SW TACT EVQ-QSE05T
8-SW21	ES-337755	SW TACT EVQ-QSE05T [EA,EV-M,EZ]
8-SW23	ES-347755	SW TACT EVQ-QSE05T
8-FL1	EO-356372	COIL TUN 1 038-332 38KHZ
8-X1	EI-356371	OSC X'TAL MS-309 4.194304MHZ
8-IB1	EH-347743	COMP R RKC1/8WB4 10K J
8-SF1	EF-347968	⚠ FUSE ICP-F10 150V 0.4A
8-1	ZS-356676	PLX BR30×08STL BLUE [PC BOARD SET SCREW]
8-2	ZW-259503	PW31×080×050NYL

9. MECHA DRIVE PC BOARD

REF. NO.	PARTS NO.	DESCRIPTION
9-IC1	EI-353851	IC MB88305-P
9-IC2	EI-337519	IC MB88301-A
9-IC3	EI-356811	IC M5224P
9-IC4	EI-347779	IC LA6393S
9-IC5,6	EI-353421	⚠ IC BA6229
9-TR2,3	ET-308141	TR 2SC2603 G
9-TR4to7	ET-308472	TR 2SA1115 E,F,G
9-TR8	ET-308141	TR 2SC2603 G
9-TR10,11	ET-348948	⚠ TR 2SD1273 P,Q
9-TR12	ET-308141	TR 2SC2603 G
9-TR13	ET-306719	TR 2SC2236 O,Y
9-TR14to16	ET-308472	TR 2SA1115 E,F,G
9-TR17	ET-355669	TR 2SC3246 G,H,J
9-TR19	ET-308472	TR 2SA1115 E,F,G
9-TR23	ET-308141	TR 2SC2603 G
9-TR24	ET-357546	TR 2SB895A P,Q,R
9-TR26,27	ET-308141	TR 2SC2603 G
9-TR300	ET-348898	TR FET 2SJ40 C,D,E
9-TR700,701	ET-308141	TR 2SC2603 G
9-D1	ED-336805	D SILICON DS135D-KB1 200/1.0A
9-D3,4	ED-344280	D SILICON H GMA-01-FY2 F05
9-D5	ED-336805	D SILICON DS135D-KB1 200/1.0A
9-D6	ED-346631	⚠ D ZENER H HZ36 3
9-D7	ED-346631	D ZENER H HZ36 3
9-D8,9	ED-331626	D ZENER H HZ3 B2
9-D10,11	ED-624903	D SILICON H 1S2473
9-D12	ED-344280	D SILICON H GMA-01-FY2 F05
9-D17,18	ED-344280	D SILICON H GMA-01-FY2 F05
9-D19	ED-348990	D SILICON H DS446
9-D20	ED-337266	D ZENER H HZ9 A1
9-D21,22	ED-624903	D SILICON H 1S2473
9-VR3	EV-353425	R S-FIX H RVF6P01 3P 103
9-SF1	EF-346880	⚠ FUSE ICP-F15 150V 0.6A
9-X1	EI-330256	OSC CE F85-006 4MHZ
9-TH1	EX-355657	⚠ POSISTER PTH61G10BD6R8N
9-IB1	EH-353789	COMP R RKC1/8B6 10K J
9-IB2	EH-353791	COMP R RKC1/8B4 10K J
9-IB3	EH-353793	COMP R RKC1/8B4 4.7K J
9-IB4	EH-353790	COMP R RKC1/8B4 22K J
9-IB5	EH-353793	COMP R RKC1/8B4 4.7K J
9-R19	ER-353878	⚠ R OMF H S15 FS 1W 2R2J
9-R42,43	ER-333582	⚠ R CB H S15 FS RDS 1/2W 2R2J
9-R45	ER-353878	⚠ R OMF S15 FS 1W 2R2J

10. DEMODULATOR PC BOARD

REF. NO.	PARTS NO.	DESCRIPTION
10-IC1A	EI-353783	IC MB88505-266M [EA/EZ]
10-IC1B	EI-357092	IC MB88505-285M [EG/EO/ES/EV-M]
10-IC2	EI-337519	IC MB88301-A
10-IC3	EI-347779	IC LA6393S
10-IC4	EI-347773	IC MB88303M
10-IC5	EI-353848	IC LA7808
10-IC6	EI-337530	⚠ IC μPC574J
10-IC7	EI-355709	IC M54572L
10-TR1	ET-308472	TR 2SA1115 E,F,G [EA/EZ/EV-M]
10-TR2to4	ET-308141	TR 2SC2603 G
10-TR5	ET-349882	⚠ TR 2SA1283 D,E
10-TR6to11	ET-308141	TR 2SC2603 G
10-TR12	ET-308472	TR 2SA1115 E,F,G
10-TR13to15	ET-308141	TR 2SC2603 G
10-TR101	ET-308141	TR 2SC2603 G
10-TR102	ET-356224	⚠ TR 2SA1286 G,H,J
10-TR103,104	ET-308472	TR 2SA1115 E,F,G
10-TR105	ET-356236	TR FET 2SK363 GR.BL
10-TR106,111	ET-308141	TR 2SC2603 G
10-TR120	ET-308141	TR 2SC2603 G
10-D1	ED-351392	D ZENER H HZ9 B [EA/EZ/EV-M]
10-D3	ED-344280	D SILICON H GMA-01-FY2 F05
10-D6	ED-348205	⚠ D SILICON V MC931 DOUBLE
10-D7,8	ED-344280	D SILICON H GMA-01-FY2 F05
10-D9	ED-523427	D SILICON H 1SS16
10-D10to13	ED-344280	D SILICON H GMA-01-FY2 F05
10-D101,102	ED-344280	D SILICON H GMA-01-FY2 F05
10-D103	ED-624903	D SILICON H 1S2473
10-VR1	EV-356323	R S-FIX H KVSF637A 3P 102
10-VR2	EV-356324	R S-FIX H KVSF637A 3P 103
10-L1	EO-330252	COIL FIX 1 EL0606SKI 101K
10-X1,2	EI-349372	OSC CE CSA4.00MG 4MHZ
10-IB1,2	EH-353788	COMP R RKC1/8B15 10K J
10-IB3	EH-347743	COMP R RKC1/8WB4 10K J
10-R16	ER-357764	R MF H F05 1/6W 6040F
10-R18,19	ER-356338	R MF H F05 1/6W 1201F
10-R24	ER-345751	⚠ R FUSE ERD2FC S10 1/4W 15ROG
10-R33	ER-340544	R MF H F05 1/6W 1002F
10-R34	ER-336751	R MF H F05 1/6W 1103F
10-R35	ER-343997	R MF H F05 1/6W 2001F
10-R101	ER-356338	R MF H F05 1/6W 1201F
10-R102	ER-357764	R MF H F05 1/6W 6040F
10-R103	ER-356338	R MF H F05 1/6W 1201F
10-CB1	EH-354077	COMP C B7ZC0711-32N
10-C13	EC-345111	C TT V EF 1R5M 50.0DC
10-C101,103	EC-356352	C TT V EF R 68M 50.0DC
10-C122	EC-332052	C EC V F05 NP SM 4R7M 35DC
10-BT1	EZ-356237	BATTERY P-01H-F4N1
10-1	EJ-347842	SOCKET IC S-I2479 P 42P
10-2EG	BV-V1030A900B	VIF BLK VS-301EG-G [EG/EV-M]
10-2EA	BV-V1030A900C	VIF BLK VS-303EA
10-2EO	BV-V1030A900D	VIF BLK VS-303EO [EO/EO(Y1)]
10-2ES	BV-V1030A900E	VIF BLK VS-303ES
10-2EZ	BV-V1030A900F	VIF BLK VS-303EZ
10-3	ZS-356676	PLX BR30×08STL BLUE [PC BOARD SET SCREW]

11. VIF BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
	TV TUNER	
11-1A	EE-353831	TV TUNER CDE1-A10 [EG,EV-M]
11-1B	EE-353833	TV TUNER CEE1-A07 [EO]
11-1C	EE-353835	TV TUNER CSE1-025 [EA]
11-1D	EE-353834	TV TUNER CZE1-024 [ES]
11-1E	EE-356135	TV TUNER CZE1-032 [EZ]
	VIF UNIT	
11-IC1	EI-705494	IC TA7607AP
11-IC2	EI-714602	IC TA7337P
11-D1	ED-714603	D VARACTOR 1SV70-20FG
11-VR1,2	EV-713607	R S-FIX RVF6P01-103
11-VR3	EV-714599	R S-FIX RVF6P01-202
11-CF1A	EH-714625	FILTER SAW SAF38.9MZ70Z [EG,EO,EV-M,EZ]
11-CF1B	EH-714626	FILTER SAW SAF36.9MZ70Z[EA]
11-CF1C	EH-714627	FILTER SAW 38.9MW70Z [ES]
11-CF2A	EH-705501	FILTER CE TPS 5.5MHZ [EG,EO,EV-M,EA,EZ]
11-CF2B	EH-705502	FILTER CE TPS 6MHZ [ES]
11-CF3A	EH-705499	FILTER CE SFE 5.5MHZ [EG,EO,EV-M,EA,EZ]
11-CF3B	EH-705500	FILTER CE SFE 6MHZ [ES]
11-L1	EO-714604	COIL FIX 1 LAL02 R68M
11-L2	EO-714606	COIL FIX 1 LAL02 2R7M
11-L3A	EO-714607	COIL RF 6F16112B1 [EG,EO,EV-M,EZ]
11-L3B	EO-714608	COIL RF 6F16112B2 [EA]
11-L3C	EO-714609	COIL RF 6F16112B4 [ES]
11-L4A	EO-714610	COIL RF 6F16113B1 [EG,EO,EV-M,ES,EZ]
11-L4B	EO-714613	COIL RF 6R16113B3 [EA]
11-L5A	EO-714614	COIL RF 6F16115B1 [EG,EO,EV-M,ES,EZ]
11-L5B	EO-714616	COIL RF 6F16115B3 [EA]
11-L6	EO-714617	COIL FIX 1 LAL02 120K
11-L7	EO-714618	COIL FIX 1 LAL02 150K
11-L8A	EO-714619	COIL FIX 1 LAL02 180M [EG,EO,EA,EV-M,EZ]
11-L8B	EO-714620	COIL FIX 1 LAL02 150M [ES]
11-L9A	EO-714621	COIL SIF-DET 5A 6F16122B1 [EG,EO,EA,EV-M,EZ]
11-L9B	EO-714623	COIL SIF-DET 5A 6F16122B2[ES]
11-C19	EC-749821	C TT R47M 35V
11-C28	EC-714601	C MM DEP 682J 50DC

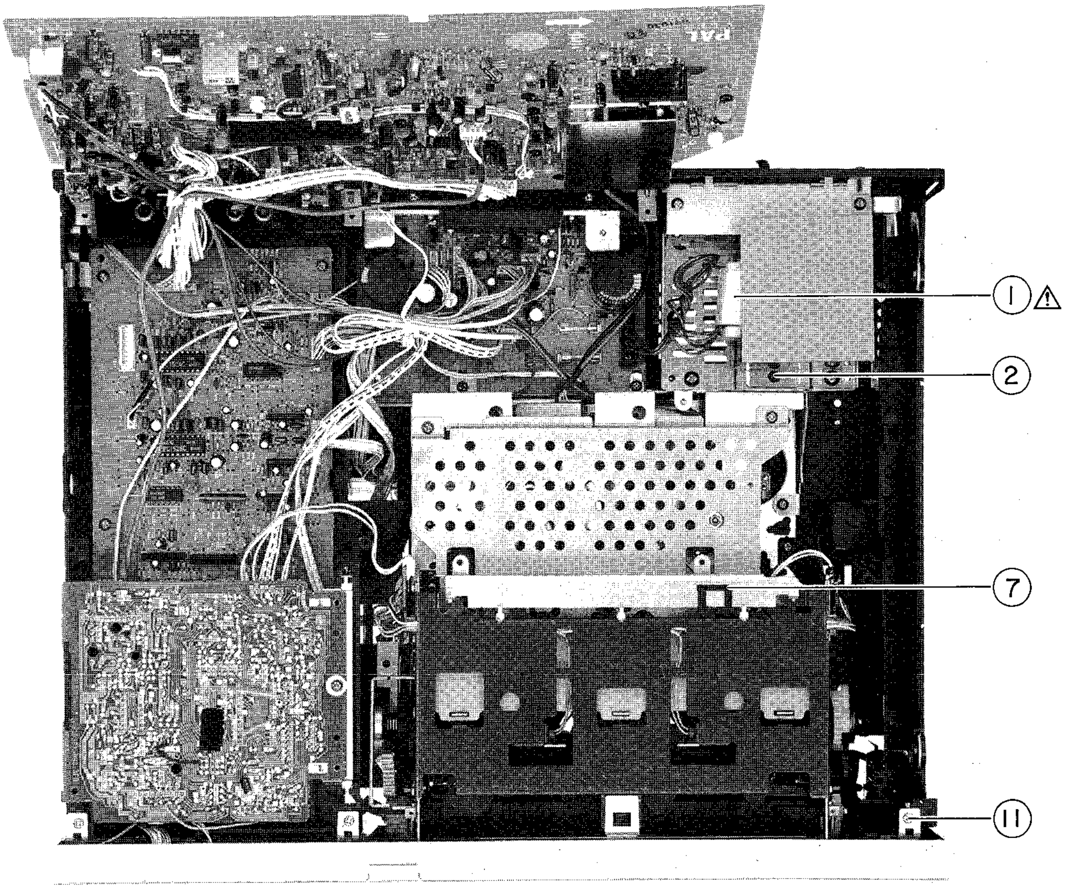
12. POWER SUPPLY PC BOARD

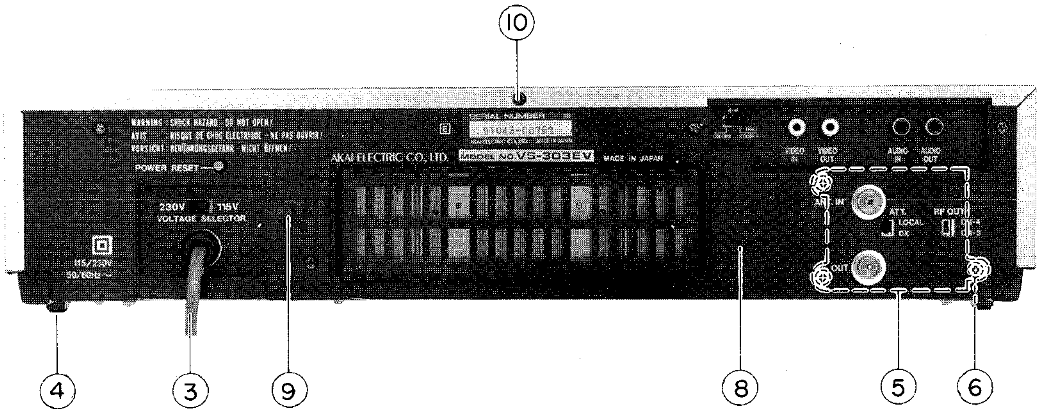
REF. NO.	PARTS NO.	DESCRIPTION
12-IC1	EI-356381	⚠ IC STK5434
12-TR1,2	ET-308472	TR 2SA1115 E,F,G
12-TR3to5	ET-308141	TR 2SC2603 G
12-TR6	ET-306719	TR 2SC2236 O,Y
12-TR7,8	ET-308141	TR 2SC2603 G
12-TR9	ET-356224	⚠ TR 2SA1286 G,H,J[EG/EO/ES]
12-TR10	ET-308141	TR 2SC2603 G [EG/EO/ES]
12-TR11	ET-306719	⚠ TR 2SC2236 O,Y
12-D1	ED-353550	⚠ D SILICON DBA30C-K12 200/3.0A
12-D2	ED-319463	⚠ D SILICON 4B4B41 100/4.0A
12-D3,4	ED-337618	⚠ D SILICON DS135E-FB6 100/1.0A
12-D6	ED-307610	D ZENER H HZ7 A2
12-D7	ED-344280	D SILICON H GMA-01-FY2 F05
12-D8,9	ED-347767	D SILICON V MC911 DOUBLE
12-D11	ED-344280	D SILICON H GMA-01-FY2 F05
12-D13	ED-337618	⚠ D SILICON DS135E-FB6 100/1.0A
12-D14	ED-344280	D SILICON H GMA-01-FY2 F05
12-D15	ED-302269	D ZENER H HZ5 A2
12-D20	ED-301911	D SILICON H DS448
12-D21	ED-344280	D SILICON H GMA-01-FY2 F05
12-TH1	EX-330533	⚠ POSISTER PTH61G04BD3R3N
12-R1,4	ER-356382	⚠ R OMF H SNP 1W R22J
12-C1	EC-353572	C EC V S10 KME 682M 35.0DC
12-C3	EC-356383	C EC V S10 KME 103M 25.0DC
12-C14	EC-328081	C EC V CUT SM 221M 80DC
12-1	ZS-357920	PLX BR30×12STL BLUE [PC BOARD SET SCREW]
	ASSEMBLY BLOCK	
12-F1	EF-601301	⚠ FUSE SEMKO T 250V 2.00A [F1]
12-F2	EF-601301	⚠ FUSE SEMKO T 250V 2.00A [F2]

13. SELECTOR PC BOARD

REF. NO.	PARTS NO.	DESCRIPTION
13-C1	EC-338411	⚠ C CE V FZ 103P 400AC
13-F1	EF-623103	⚠ FUSE SEMKO T 250V 1.00A [EG]
13-SW1	ES-354430	⚠ SW SLIDE 00220950 02-02-2N [EG/ES/EV-M]
13-1	EZ-357643	⚠ CIRCUIT PROTECTOR TBC6211-22-0472 [EV-M]

ASSEMBLY BLOCK

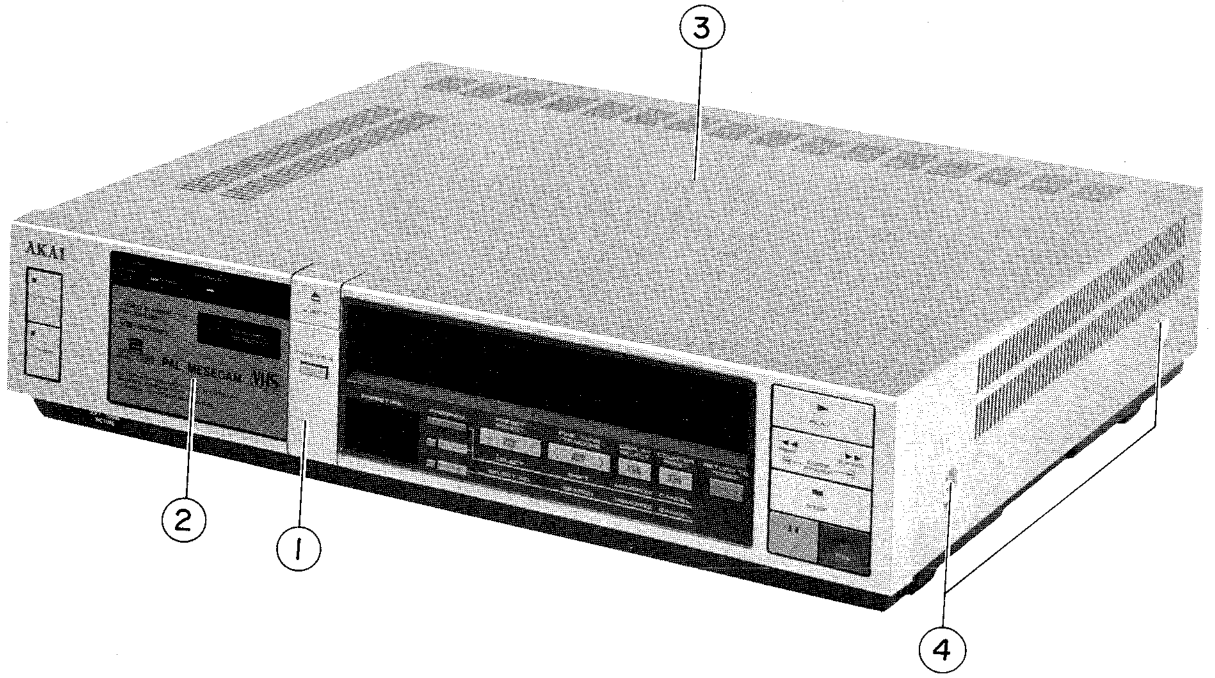




14. ASSEMBLY BLOCK⚠

REF. NO.	PARTS NO.	DESCRIPTION
14-1EG	BT-353936	⚠ TRANS POWER V1027 EG 220-110
14-1EA	BT-357703	⚠ TRANS POWER V1030 EK 240-200
14-1EO	BT-356595	⚠ TRANS POWER V1027 EO 220 [EO/EO(Y1)]
14-1ES	BT-354342	⚠ TRANS POWER V1027 ES 250-220
14-1EZ	BT-356594	⚠ TRANS POWER V1027 EZ 230-115 [EZ/EV-M]
14-2	ZS-357528	DELL TIGHT BR30×08STL CMT
14-3EG	EW-356588	⚠ AC CORD 2CORES KP419C LTCE2F-CB EV [EG/EO/ES/EV-M]
14-3EA	EW-356592	⚠ AC CORD 2CORES NRBS2×0.75-CB B [EA/EZ]
14-4	SA-353927	FOOT
14-5EG	BV-353839	RF CONVERTER/BOOSTOR MDL6-023
14-5EA	BV-353841	RF CONVERTER SW MSL5-150
14-5EO	BV-353842	RF CONVERTER/BOOSTOR MSL6-023 [EO/EO(Y1)]
14-5ES	BV-353840	RF CONVERTER/BOOSTOR MIL6-023
14-5EZ	BV-354879	RF CONVERTER/BOOSTOR MDL5-073 [EZ/EV-M]
14-6	ZS-356675	PLX BR30×10STL BLUE
14-7	MZ-357839	GUIDE CASSETTE (F)
14-8EG	SP-353795E	PANEL REAR VS-303EG
14-8EA	SP-353795D	PANEL REAR VS-303EA
14-8EO	SP-353795F	PANEL REAR VS-303EO
14-8ES	SP-353795G	PANEL REAR VS-303ES
14-8EVM	SP-353795J	PANEL REAR VS-303EV-M
14-8EZ	SP-353795K	PANEL REAR VS-303EZ
14-9	SZ-354739	CAP PANEL
14-10	ZS-357944	ST BR30×10STL BNI SPECIAL
14-11	ZS-357946	PLX PAN30×10STL CMT C080

FINAL ASSEMBLY BLOCK



15. FINAL ASSEMBLY BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
	PANEL FRONT PART	
15-1A	BD-B353747X1	PANEL FRONT V3(1) PART [EG,EO,ES]
15-1B	BD-B353747X3	PANEL FRONT V3(3) PART [EA,EA]
15-1C	BD-B353747X4	PANEL FRONT V3(4) PART[EV-M]
15-1D	BD-B353747Y1	PANEL FRONT V3(1)-B PART [EO-B]
	FINAL ASSEMBLY BLOCK	
15-2A	SP-353616G	PLATE DECORATION (A) VS-303EG
15-2B	SP-353616F	PLATE DECORATION (A) VS-303EA
15-2C	SP-353616H	PLATE DECORATION (A) VS-303EO
15-2CB	SP-358946K	PLATE DECOLATION (A) VS-303EO-B
15-2D	SP-353616K	PLATE DECORATION (A) VS-303ES
15-2E	SP-353616M	PLATE DECORATION (A) VS-303EV-M
15-2F	SP-353616N	PLATE DECORATION (A) VS-303EZ
15-3	SP-353796	COVER UPPER
15-3B	SP-353796B	COVER UPPER-B [EO-B]
15-4	ZS-357943	ST BID40×10STL NI3 SPECIAL
15-4B	ZG-358696	ST BID40×10STL BNI SPECIAL [EO-B]
15-5x	EW-348414	CORD PAL [AERIAL CORD]

16. REMOTE CONTROL TRANSMITTER RC-V603

REF. NO.	PARTS NO.	DESCRIPTION
16-1EA	AV-357907	REMOTE CONTROL RC-V603B-E2 WIRELESS [EA,EZ]
16-1ES	AV-354008	REMOTE CONTROL RC-V603B-E1 WIRELESS [EO,ES,EV-M]
16-1EO	AV-354013	REMOTE CONTROL RC-V603B-E1B WIRELESS [EO-B]
16-IC1	EI-749983	IC μPD1943G
16-TR1	ET-318604	TR 2SD545NP E,F
16-D1	ED-714631	D LED TLN105A
16-D2	ED-714631	D LED TLN105A
16-D3,4	ED-557447	D SILICON H 1S1588
16-X1	EI-710044	OSC CE CSB455EB 455KHZ

SYMBOL FOR COLOR VARIATION

NON: STANDARD COLOR
B or BL: BLACK

INDEX

PARTS NO.	REF. NO.	PARTS NO.	REF. NO.	PARTS NO.	REF. NO.	PARTS NO.	REF. NO.
AV-354008	16-1ES	ED-307610	12-D6	ED-347777	8-D5	EI-349372	10-X1
AV-354013	16-1EO	ED-319463	12-D2	ED-347777	8-D7	EI-349372	10-X2
AV-357907	16-1EA	ED-331626	9-D8	ED-347777	8-D4	EI-353421	9-IC5
BA-M3220A020A	1-11	ED-331626	9-D9	ED-347777	8-D1	EI-353421	9-IC6
BA-V1027A300A	5-1EG	ED-336805	9-D1	ED-348205	10-D6	EI-353475	7-IC5
BA-V1027A300B	5-1EA	ED-336805	9-D5	ED-348462	8-D14	EI-353477	7-IC6
BA-V1027A300D	5-1ES	ED-337266	9-D20	ED-348990	8-D16	EI-353478	7-IC9
BA-V1027A320A	5-2EG	ED-337618	12-D13	ED-348990	9-D19	EI-353478	7-IC12
BV-V1027A320B	5-2EA	ED-337618	12-D3	ED-351392	10-D1	EI-353697	6-IC6
BA-V1027A330B	5-3EG	ED-337618	12-D4	ED-353550	12-D1	EI-353775	6-IC501
BA-V1027A330C	5-3EA	ED-344280	6-D6	ED-356359	8-D11	EI-353777	7-IC1
BA-V1030A340C	5-7EG	ED-344280	6-D4	ED-356359	8-D8	EI-353783	10-IC1A
BA-V1030A340D	5-7EA	ED-344280	6-D510	ED-356430	1-D1	EI-353813	6-IC2
BA-V1030A350C	5-5EA	ED-344280	6-D5	ED-357540	2-21	EI-353814	6-IC1
BA-V1030A350D	5-5EG	ED-344280	6-D7	ED-523427	6-D3	EI-353848	10-IC5
BA-V1030A350E	5-5EO	ED-344280	6-D11	ED-523427	10-D9	EI-353851	9-IC1
BA-V1030A350F	5-5ES	ED-344280	6-D502	ED-557447	16-D3	EI-353852	6-IC502
BA-V1030A350G	5-5EZ	ED-344280	6-D501	ED-557447	16-D4	EI-353867	7-IC2
BA-V1030A350M	5-5EVM	ED-344280	6-D506	ED-624903	8-D23	EI-353893	8-IC2
BA-V1030A370C	5-4	ED-344280	6-D505	ED-624903	9-D10	EI-354399	8-IC3
BD-B353747X1	15-1A	ED-344280	6-D504	ED-624903	9-D11	EI-354400	7-IC3
BD-B353747X3	15-1B	ED-344280	6-D503	ED-624903	9-D22	EI-354401	7-IC8
BD-B353747X4	15-1C	ED-344280	6-D8	ED-624903	9-D21	EI-354401	7-IC4
BD-B353747Y1	15-1D	ED-344280	6-D14	ED-624903	10-D103	EI-355630	6-IC3
BL-B353110	3-27	ED-344280	6-D13	ED-714603	11-D1	EI-355709	10-IC7
BL-B353122	2-5	ED-344280	6-D9	ED-714631	16-D1	EI-356370	8-IC5
BL-B353126	3-4	ED-344280	6-D12	ED-714631	16-D2	EI-356371	8-X1
BL-B357555	2-23	ED-344280	6-D1	EE-353831	11-1A	EI-356381	12-IC1
BM-B353329	1-10	ED-344280	6-D2	EE-353833	11-1B	EI-356811	9-IC3
BM-353630	3-6	ED-344280	6-D15	EE-353834	11-1D	EI-357091	8-IC1
BM-353657	3-28	ED-344280	7-D1	EE-353835	11-1C	EI-357092	10-IC1B
BR-B352383A	3-29	ED-344280	7-D7	EE-356135	11-1E	EI-705494	11-IC1
BR-B352383A	3-30	ED-344280	7-D14	EF-346880	9-SF1	EI-710044	16-X1
BT-353936	14-1EG	ED-344280	7-D2	EF-347968	8-SF1	EI-714602	11-IC2
BT-354342	14-1ES	ED-344280	7-D5	EF-601301	12-F1	EI-749983	16-IC1
BT-356594	14-1EZ	ED-344280	7-D10	EF-601301	12-F2	EJ-347842	7-1
BT-356595	14-1EO	ED-344280	7-D6	EF-623103	13-F1	EJ-347842	10-1
BT-357703	14-1EA	ED-344280	7-D13	EH-345113	6-FL1	EJ-353426	6-1B
BV-B352377	2-6	ED-344280	7-D11	EH-347743	8-IB1	EJ-354210	6-1A
BV-V1030A030A	2-8	ED-344280	7-D12	EH-347743	10-IB3	EL-353624	4-5
BV-V1030A100A	3-9	ED-344280	7-D15	EH-353788	10-IB2	EL-353625	4-6
BV-V1030A210B	1-2	ED-344280	7-D4	EH-353788	10-IB1	EO-321254	6-L501
BV-V1030A220D	1-1	ED-344280	7-D21	EH-353789	9-IB1	EO-330241	6-L3
BV-V1030A250A	4-1	ED-344280	7-D9	EH-353790	9-IB4	EO-330241	6-L42
BV-V1030A900B	5-6EG	ED-344280	7-D20	EH-353791	9-IB2	EO-330241	6-L41
BV-V1030A900B	10-2EG	ED-344280	7-D17	EH-353793	9-IB5	EO-330241	6-L25
BV-V1030A900C	5-6EA	ED-344280	7-D19	EH-353793	9-IB3	EO-330241	6-L30
BV-V1030A900C	10-2EA	ED-344280	7-D16	EH-353817	6-DL1	EO-330241	6-L12
BV-V1030A900D	5-6EO	ED-344280	7-D18	EH-354077	10-CB1	EO-330241	6-L38
BV-V1030A900D	10-2EO	ED-344280	7-D3	EH-354086	6-FL4	EO-330241	6-L36
BV-V1030A900E	5-6ES	ED-344280	8-D22	EH-356067	6-FL3	EO-330241	6-L27
BV-V1030A900E	10-2ES	ED-344280	8-D18	EH-356672	6-FL2	EO-330241	6-L22
BV-V1030A900F	5-6EZ	ED-344280	8-D17	EH-356692	7-IB1	EO-330241	6-L8
BV-V1030A900F	10-2EZ	ED-344280	8-D20	EH-357597	7-CN1	EO-330241	6-L26
BV-353839	14-5EG	ED-344280	8-D19	EH-358801	6-DL2	EO-330241	6-L23
BV-353840	14-5ES	ED-344280	9-D18	EH-705499	11-CF3A	EO-330241	6-L4
BV-353841	14-5EA	ED-344280	9-D12	EH-705500	11-CF3B	EO-330252	10-L1
BV-353842	14-5EO	ED-344280	9-D17	EH-705501	11-CF2A	EO-347786	6-FL502
BV-354879	14-5EZ	ED-344280	9-D3	EH-705502	11-CF2B	EO-351860	6-L1
EC-200949	6-C13	ED-344280	9-D4	EH-714625	11-CF1A	EO-351864	6-L7
EC-200949	6-C3	ED-344280	10-D3	EH-714626	11-CF1B	EO-351864	6-L44
EC-200949	6-C11	ED-344280	10-D12	EH-714627	11-CF1C	EO-351865	6-L19
EC-300193	7-C48	ED-344280	10-D7	EI-309878	6-X1	EO-351865	6-L2
EC-328081	12-C14	ED-344280	10-D8	EI-322347	6-X2	EO-351865	6-L24
EC-332052	6-C21	ED-344280	10-D10	EI-324203	6-IC4	EO-351865	6-L5
EC-332052	6-C5	ED-344280	10-D11	EI-328593	6-IC5	EO-351865	6-L6
EC-332052	7-C73	ED-344280	10-D101	EI-330256	9-X1	EO-351867	6-L13
EC-332052	10-C122	ED-344280	10-D13	EI-337228	7-IC13	EO-351868	6-L10
EC-338411	13-C1	ED-344280	10-D102	EI-337228	7-IC7	EO-351868	6-L11
EC-345111	10-C13	ED-344280	12-D7	EI-337228	7-IC10	EO-351868	6-L39
EC-346764	6-VC1	ED-344280	12-D11	EI-337228	7-IC14	EO-351869	6-L21
EC-346765	6-VC2	ED-344280	12-D14	EI-337519	9-IC2	EO-351869	6-L9
EC-353572	12-C1	ED-344280	12-D21	EI-337519	10-IC2	EO-351869	6-L28
EC-356352	10-C101	ED-346631	9-D6	EI-337530	10-IC6	EO-353774	6-FL501
EC-356352	10-C103	ED-346631	9-D7	EI-347773	10-IC4	EO-353900	6-L43
EC-356383	12-C3	ED-347767	12-D8	EI-347779	7-IC11	EO-353900	6-L14
EC-714601	11-C28	ED-347767	12-D9	EI-347779	9-IC4	EO-353900	6-L20
EC-749821	11-C19	ED-347776	8-D3	EI-347779	10-IC3	EO-353900	6-L15
ED-301911	12-D20	ED-347776	8-D2	EI-348111	8-IC4	EO-353900	6-L31
ED-302269	12-D15	ED-347777	8-D6	EI-349372	7-X1	EO-353901	6-L45

INDEX

PARTS NO.	REF. NO.	PARTS NO.	REF. NO.	PARTS NO.	REF. NO.	PARTS NO.	REF. NO.
EO-353902	6-L37	ES-353708	8-SW1	ET-308141	12-TR4	EV-356324	10-VR2
EO-354600	6-L18	ES-354308	2-33	ET-308141	12-TR10	EV-356575	6-VR1
EO-354600	6-L46	ES-354430	13-SW1	ET-308141	12-TR5	EV-356575	6-VR4
EO-356372	8-FL1	ET-200401	6-TR504	ET-308141	12-TR7	EV-356575	6-VR3
EO-356442	6-OSC501	ET-200402	6-TR506	ET-308141	12-TR3	EV-356576	6-VR11
EO-356688	6-L40	ET-200402	6-TR505	ET-308141	12-TR8	EV-356576	6-VR2
EO-357507	6-L16	ET-306719	9-TR13	ET-308472	6-TR15	EV-356577	6-VR501
EO-357507	6-L17	ET-306719	12-TR11	ET-308472	6-TR48	EV-356577	6-VR5
EO-357507	6-L34	ET-306719	12-TR6	ET-308472	6-TR14	EV-356577	6-VR7
EO-357508	6-L29	ET-308141	6-TR29	ET-308472	6-TR6	EV-356577	6-VR6
EO-357509	6-L35	ET-308141	6-TR9	ET-308472	6-TR8	EV-356579	6-VR12
EO-357852	6-L32	ET-308141	6-TR16	ET-308472	6-TR18	EV-356579	6-VR9
EO-443722	6-L502	ET-308141	6-TR12	ET-308472	6-TR7	EV-356579	6-VR10
EO-714604	11-L1	ET-308141	6-TR19	ET-308472	6-TR32	EV-356583	6-VR503
EO-714606	11-L2	ET-308141	6-TR4	ET-308472	6-TR43	EV-356583	6-VR502
EO-714607	11-L3A	ET-308141	6-TR3	ET-308472	6-TR50	EV-357619	6-VR504
EO-714608	11-L3B	ET-308141	6-TR17	ET-308472	6-TR23	EV-713607	11-VR2
EO-714609	11-L3C	ET-308141	6-TR10	ET-308472	6-TR2	EV-713607	11-VR1
EO-714610	11-L4A	ET-308141	6-TR25	ET-308472	7-TR9	EV-714599	11-VR3
EO-714613	11-L4B	ET-308141	6-TR1	ET-308472	7-TR15	EW-348414	15-5x
EO-714614	11-L5A	ET-308141	6-TR24	ET-308472	7-TR5	EW-356588	14-3EG
EO-714616	11-L5B	ET-308141	6-TR30	ET-308472	7-TR8	EW-356592	14-3EA
EO-714617	11-L6	ET-308141	6-TR5	ET-308472	7-TR2	EX-330533	12-TH1
EO-714618	11-L7	ET-308141	6-TR34	ET-308472	7-TR17	EX-355657	9-TH1
EO-714619	11-L8A	ET-308141	6-TR33	ET-308472	9-TR6	EX-357642	1-6
EO-714620	11-L8B	ET-308141	6-TR20	ET-308472	9-TR15	EZ-356237	10-BT1
EO-714621	11-L9A	ET-308141	6-TR22	ET-308472	9-TR14	EZ-357643	13-1
EO-714623	11-L9B	ET-308141	6-TR11	ET-308472	9-TR19	HC-353332	1-12
ER-200381	7-R36	ET-308141	6-TR46	ET-308472	9-TR7	HE-325273	2-2
ER-200522	7-R66	ET-308141	6-TR21	ET-308472	9-TR4	HR-353638	2-14
ER-333582	9-R43	ET-308141	6-TR502	ET-308472	9-TR5	MB-357511	4-34
ER-333582	9-R42	ET-308141	6-TR42	ET-308472	9-TR16	MB-357976	2-35
ER-336751	10-R34	ET-308141	6-TR503	ET-308472	10-TR103	MH-357860	2-34
ER-336754	7-R16	ET-308141	6-TR501	ET-308472	10-TR12	MI-B353148	2-30
ER-337338	7-R35	ET-308141	6-TR51	ET-308472	10-TR104	ML-B351942	3-24
ER-337338	7-R34	ET-308141	6-TR41	ET-308472	10-TR1	ML-353146	2-1
ER-340541	7-R37	ET-308141	6-TR40	ET-308472	12-TR1	ML-353161	4-12
ER-340542	7-R33	ET-308141	6-TR38	ET-308472	12-TR2	ML-353162	4-14
ER-340544	10-R33	ET-308141	6-TR36	ET-309434	8-TR7	MP-357547	2-9
ER-340545	7-R19	ET-308141	6-TR31	ET-309434	8-TR8	MR-353164	4-3
ER-343997	7-R17	ET-308141	6-TR508	ET-318308	4-28	MR-353165	4-4
ER-343997	10-R35	ET-308141	6-TR507	ET-318308	4-27	MZ-B351526	3-18
ER-345751	10-R24	ET-308141	6-TR37	ET-318604	16-TR1	MZ-B351529	3-21
ER-349195	7-R67	ET-308141	7-TR4	ET-321644	6-TR13	MZ-B353201	4-21
ER-353878	9-R45	ET-308141	7-TR7	ET-330717	8-D21	MZ-B353211	4-2
ER-353878	9-R19	ET-308141	7-TR19	ET-336845	8-TR2	MZ-351524	3-14
ER-356338	10-R103	ET-308141	7-TR22	ET-336845	8-TR1	MZ-351525	3-16
ER-356338	10-R19	ET-308141	7-TR10	ET-348898	9-TR300	MZ-351527	3-25
ER-356338	10-R18	ET-308141	7-TR11	ET-348948	9-TR10	MZ-353163	4-16
ER-356338	10-R101	ET-308141	7-TR14	ET-348948	9-TR11	MZ-353166	4-9
ER-356382	12-R4	ET-308141	7-TR6	ET-349882	10-TR5	MZ-353167	4-10
ER-356382	12-R1	ET-308141	7-TR16	ET-352994	6-TR28	MZ-353168	4-19
ER-356574	7-R68	ET-308141	7-TR18	ET-352994	6-TR47	MZ-353169	4-15
ER-357567	7-R132	ET-308141	7-TR1	ET-352994	6-TR35	MZ-353170	4-13
ER-357764	10-R102	ET-308141	7-TR20	ET-353635	3-32	MZ-353364	3-12
ER-357764	10-R16	ET-308141	9-TR27	ET-353635	3-33	MZ-355643	4-7
ES-347048	3-34	ET-308141	9-TR12	ET-355669	9-TR17	MZ-357839	14-7
ES-347755	8-SW14	ET-308141	9-TR8	ET-356153	8-TR4	SA-353927	14-4
ES-347755	8-SW8	ET-308141	9-TR26	ET-356153	8-TR3	SP-353040D	4-33
ES-347755	8-SW13	ET-308141	9-TR23	ET-356224	6-TR45	SP-353210	4-31
ES-347755	8-SW11	ET-308141	9-TR3	ET-356224	6-TR44	SP-353616F	15-2B
ES-347755	8-SW12	ET-308141	9-TR2	ET-356224	7-TR21	SP-353616G	15-2A
ES-347755	8-SW18	ET-308141	9-TR700	ET-356224	7-TR3	SP-353616H	15-2C
ES-347755	8-SW16	ET-308141	9-TR701	ET-356224	7-TR12	SP-353616K	15-2D
ES-347755	8-SW17	ET-308141	10-TR2	ET-356224	10-TR102	SP-353616M	15-2E
ES-347755	8-SW15	ET-308141	10-TR106	ET-356224	12-TR9	SP-353616N	15-2F
ES-347755	8-SW21	ET-308141	10-TR14	ET-356236	10-TR105	SP-353795D	14-8EA
ES-347755	8-SW19	ET-308141	10-TR120	ET-357546	9-TR24	SP-353795E	14-8EG
ES-347755	8-SW10	ET-308141	10-TR4	EV-307621	7-VR9	SP-353795F	14-8EO
ES-347755	8-SW4	ET-308141	10-TR3	EV-336765	7-VR3	SP-353795G	14-8ES
ES-347755	8-SW20	ET-308141	10-TR7	EV-336765	7-VR4	SP-353795J	14-8EVM
ES-347755	8-SW23	ET-308141	10-TR9	EV-336766	7-VR2	SP-353795K	14-8EZ
ES-347755	8-SW7	ET-308141	10-TR15	EV-336768	7-VR5	SP-353796	15-3
ES-347755	8-SW5	ET-308141	10-TR101	EV-336768	7-VR1	SP-353796B	15-3B
ES-347755	8-SW6	ET-308141	10-TR111	EV-336769	7-VR6	SP-358946K	15-2CB
ES-347755	8-SW2	ET-308141	10-TR8	EV-337949	6-VR13	SR-357552	2-10
ES-347755	8-SW9	ET-308141	10-TR6	EV-337949	6-VR8	SZ-354739	14-9
ES-347755	8-SW3	ET-308141	10-TR13	EV-342230	7-VR7	VT-V1030A080A	2-17
ES-353622	4-25	ET-308141	10-TR11	EV-353425	9-VR3	VT-V1030A090A	2-18
ES-353653	3-26	ET-308141	10-TR10	EV-356323	10-VR1	VT-353655	1-8

INDEX

PARTS NO.	REF. NO.	PARTS NO.	REF. NO.	PARTS NO.	REF. NO.	PARTS NO.	REF. NO.
VT-353658	2-19	ZG-358696	15-4B	ZS-417194	3-8	ZW-353647	3-22
ZG-313209	2-32	ZS-302938	2-20	ZS-417216	4-26	ZW-354346	3-10
ZG-313261	2-13	ZS-318206	1-3	ZS-422076	3-11	ZW-357164	2-28
ZG-321598	2-16	ZS-328607	2-22	ZS-432843	1-9	ZW-357164	3-5
ZG-353204	4-8	ZS-353268	1-5	ZS-432843	1-7	ZW-381881	3-2
ZG-353205	4-17	ZS-354332	1-4	ZS-460440	2-3	ZW-413188	3-3
ZG-353206	4-32	ZS-354402	3-31	ZS-608220	3-7	ZW-516993	2-31
ZG-353626	2-27	ZS-356675	6-3	ZS-609434	3-1		
ZG-353627	2-29	ZS-356675	14-6	ZW-259503	8-2		
ZG-353648	3-15	ZS-356676	7-3	ZW-259738	2-11		
ZG-356682	3-17	ZS-356676	8-1	ZW-259738	3-19		
ZG-356911	4-20	ZS-356676	10-3	ZW-270101	2-12		
ZG-357158	4-23	ZS-356677	6-2	ZW-270101	3-20		
ZG-357559	2-24	ZS-356677	7-2	ZW-270101	4-18		
ZG-357753	4-22	ZS-357528	6-4	ZW-270123	3-23		
ZG-357769	2-7	ZS-357528	14-2	ZW-270123	4-11		
ZG-357864	4-29	ZS-357920	12-1	ZW-288797	3-13		
ZG-357865	4-30	ZS-357943	15-4	ZW-324417	2-25		
ZG-357866	2-4	ZS-357944	14-10	ZW-343120	4-24		
ZG-357946	14-11	ZS-379350	2-15	ZW-350839	2-26		

AKAI

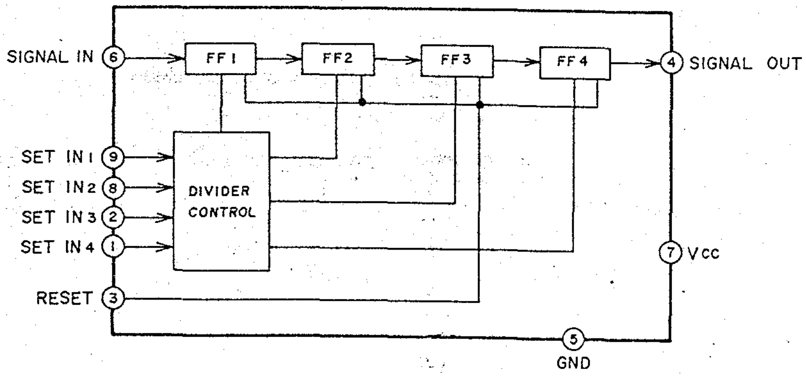
MODEL VS-303 EA/EG/EV-M /EO/ES/EZ

SCHEMATIC DIAGRAM AND PC BOARDS

TABLE OF CONTENTS

1. SCHEMATIC DIAGRAM OF ICs 2
2. CONTROL BLOCK DIAGRAM 6
3. POWER SUPPLY BLOCK DIAGRAM 7
4. MECHA DRIVE BLOCK DIAGRAM 8
5. MECHA MODE AND ACTIONFLOW 9
6. SERVO BLOCK DIAGRAM 10
7. VIDEO BLOCK DIAGRAM 11
8. CONNECTION DIAGRAM 12
9. OTHER PC BOARDS 13
10. VIDEO SCHEMATIC DIAGRAM 14
11. VIDEO PC BOARD 15
12. POWER SUPPLY SCHEMATIC DIAGRAM 16
13. POWER SUPPLY PC BOARD 17
14. OPERATION SCHEMATIC DIAGRAM 18
15. OPERATION PC BOARD 19
16. MECHA DRIVE SCHEMATIC DIAGRAM 20
17. MECHA DRIVE PC BOARD 21
18. SERVO SCHEMATIC DIAGRAM 22
19. SERVO PC BOARD 23
20. DEMODULATOR SCHEMATIC DIAGRAM 24
21. DEMODULATOR PC BOARD 25
22. VS-303EA TUNER/VIF UNIT SCHEMATIC DIAGRAM/PC BOARD 26
23. VS-303EG TUNER/VIF UNIT SCHEMATIC DIAGRAM/PC BOARD 27
24. VS-303EV-M TUNER/VIF UNIT SCHEMATIC DIAGRAM/PC BOARD ... 28
25. VS-303EO TUNER/VIF UNIT SCHEMATIC DIAGRAM/PC BOARD 29
26. VS-303ES TUNER/VIF UNIT SCHEMATIC DIAGRAM/ PC BOARD 30
27. VS-303EZ TUNER/VIF UNIT SCHEMATIC DIAGRAM/ PC BOARD 31
28. MOTOR/REMOTE CONTROL UNIT SCHEMATIC DIAGRAM.... 32
29. MOTOR/REMOTE CONTROL UNIT PC BOARD 32

AN6881 (1～16 Frequency Divider)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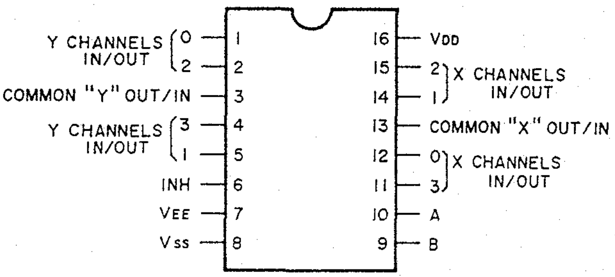
FF1
FF2
FF3
FF4
④ SIGNAL OUT
SET IN1 ⑨
SET IN2 ⑧
SET IN3 ②
SET IN4 ①
DIVIDER CONTROL
⑦ Vcc
RESET ③
⑤ GND

TRUTH TABLE

DEVIDED RATIO / PIN NUMBER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
9	L	H	L	H	L	H	L	H	L	H	L	H	L	H	L	H
8	L	L	H	H	L	L	H	H	L	L	H	H	L	L	H	H
2	L	L	L	L	H	H	H	H	L	L	L	L	H	H	H	H
1	L	L	L	L	L	L	L	L	H	H	H	H	H	H	H	H

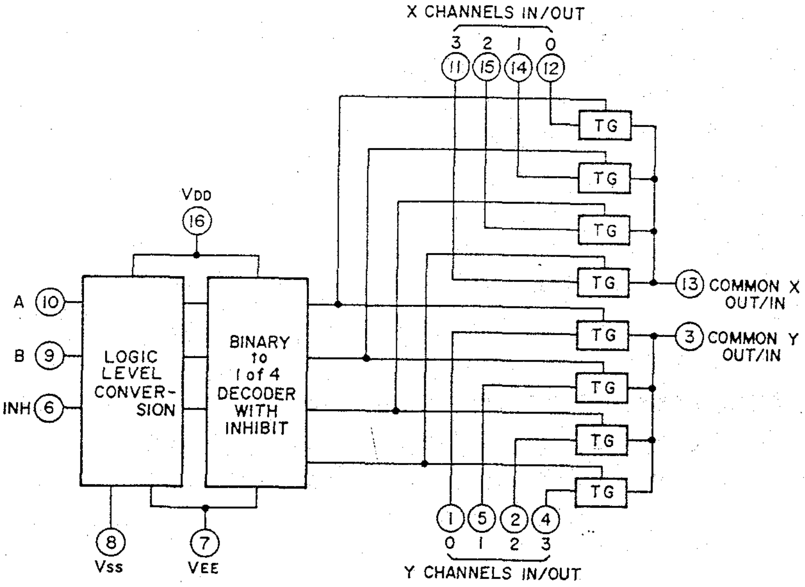
BU4052B (Analog Multiplexers/Demultiplexers)


Y CHANNELS IN/OUT 0 — 1
2 — 2
COMMON "Y" OUT/IN — 3
Y CHANNELS IN/OUT 3 — 4
1 — 5
INH — 6
VEE — 7
Vss — 8
16 — VDD
15 — 2 X CHANNELS IN/OUT
14 — 1
13 — COMMON "X" OUT/IN
12 — 0 X CHANNELS IN/OUT
11 — 3
10 — A
9 — B

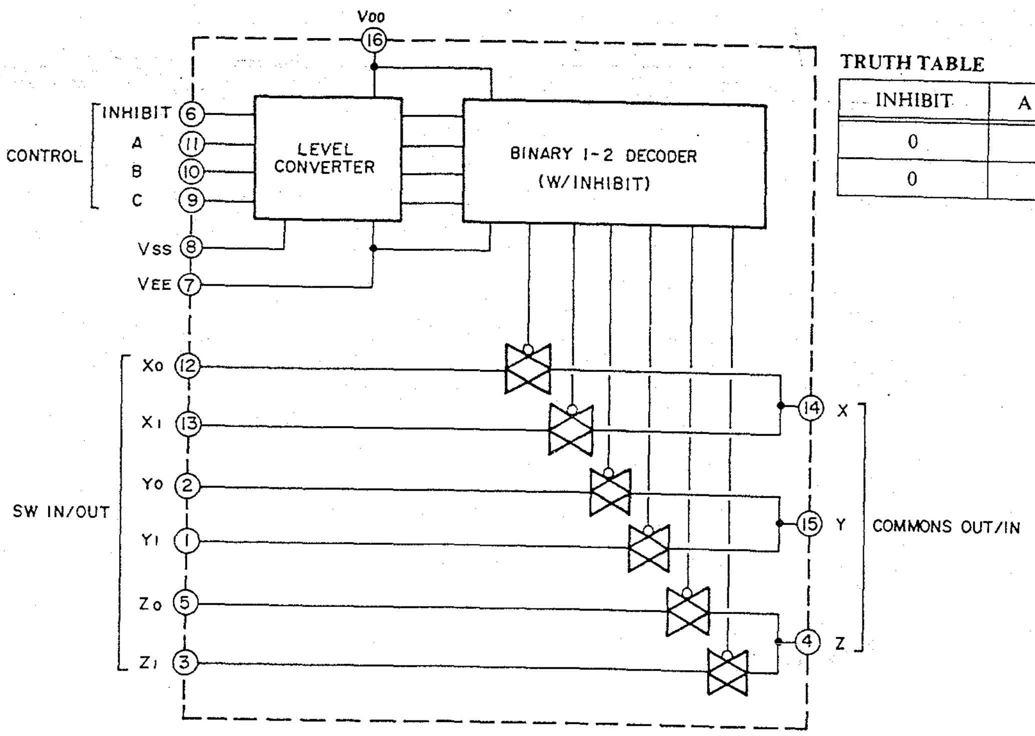
TRUTH TABLE

INHIBIT ⑥	A ⑩	B ⑨	"ON" CHANNEL
L	L	L	0X, 0Y
L	H	L	1X, 1Y
L	L	H	2X, 2Y
L	H	H	3X, 3Y
H	X	X	NONE

X=DON'T CARE


X CHANNELS IN/OUT
3 2 1 0
⑪ ⑮ ⑭ ⑫
VDD
⑯
A ⑩
B ⑨
INH ⑥
LOGIC LEVEL CONVER-SION
BINARY to 1 of 4 DECODER WITH INHIBIT
TG
TG
TG
TG
TG
TG
TG
TG
⑬ COMMON X OUT/IN
③ COMMON Y OUT/IN
⑧ Vss
⑦ VEE
① ⑤ ② ④
0 1 2 3
Y CHANNELS IN/OUT

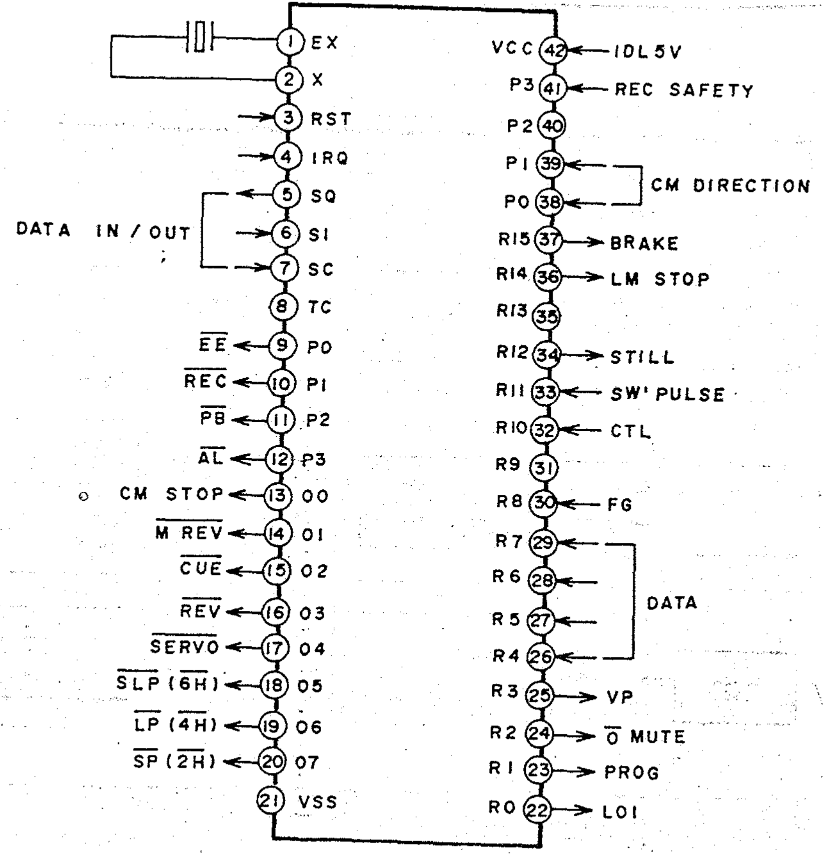
HD14053BP/MC14053 (Analog Multiplexers/Demultiplexers)


VDD
16
INHIBIT 6
A 11
B 10
C 9
CONTROL
LEVEL CONVERTER
BINARY 1-2 DECODER (W/INHIBIT)
VSS 8
VEE 7
X0 12
X1 13
Y0 2
Y1 1
Z0 5
Z1 3
SW IN/OUT
14 X
15 Y
4 Z
COMMONS OUT/IN

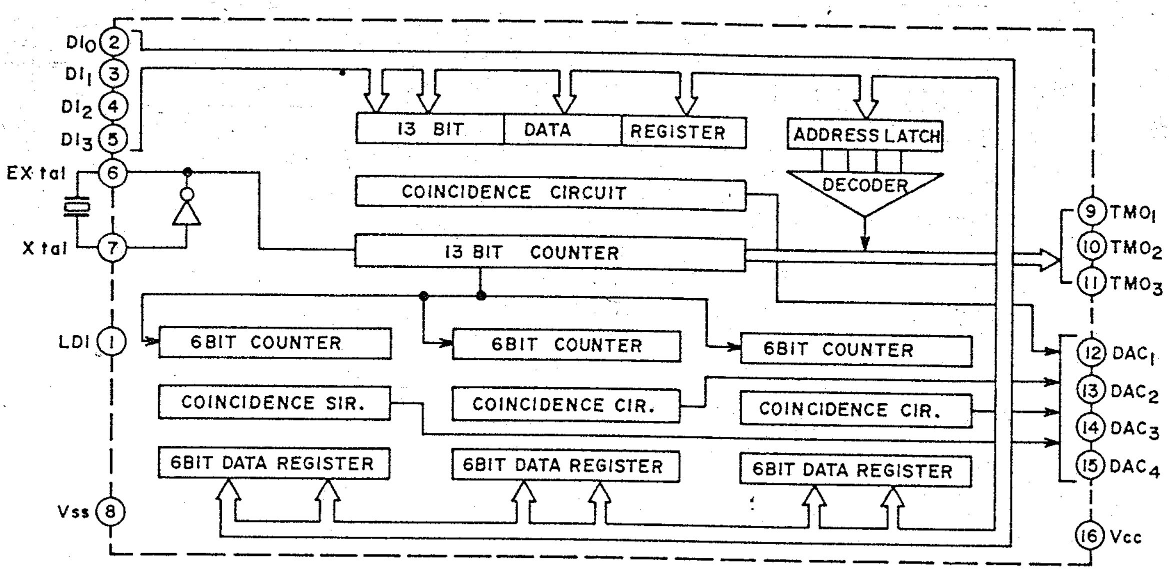
TRUTH TABLE

INHIBIT	A or B or C	"ON" CHANNEL
0	0	X_0 or Y_0 or Z_0
0	1	X_1 or Y_1 or Z_1

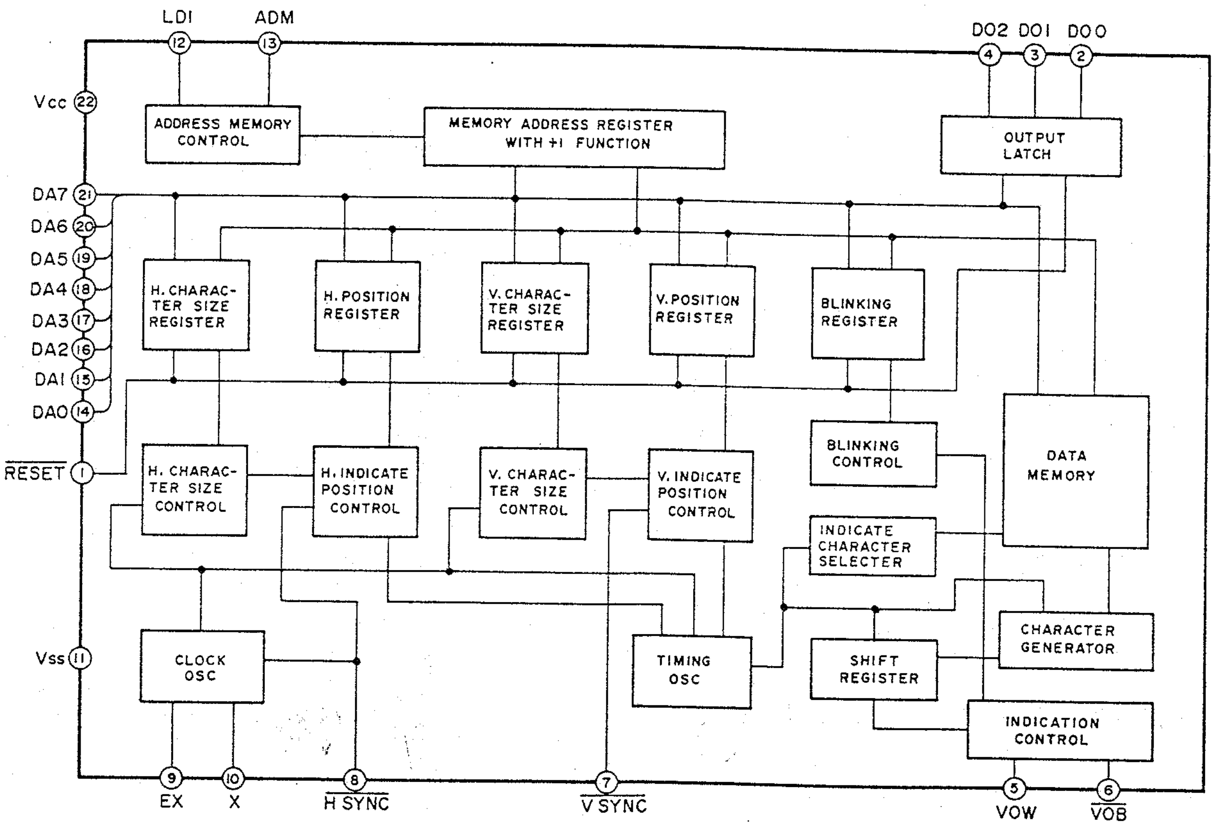
MB8841 (Syscon)


1 EX
2 X
3 RST
4 IRQ
5 SQ
6 SI
7 SC
DATA IN / OUT
8 TC
EE 9 P0
REC 10 P1
PB 11 P2
AL 12 P3
CM STOP 13 O0
M REV 14 O1
CUE 15 O2
REV 16 O3
SERVO 17 O4
SLP (6H) 18 O5
LP (4H) 19 O6
SP (2H) 20 O7
21 VSS
VCC 42 IDL 5V
P3 41 REC SAFETY
P2 40
P1 39
P0 38
CM DIRECTION
R15 37 BRAKE
R14 36 LM STOP
R13 35
R12 34 STILL
R11 33 SW' PULSE
R10 32 CTL
R9 31
R8 30 FG
R7 29
R6 28
R5 27
R4 26
DATA
R3 25 VP
R2 24 O MUTE
R1 23 PROG
R0 22 LOI

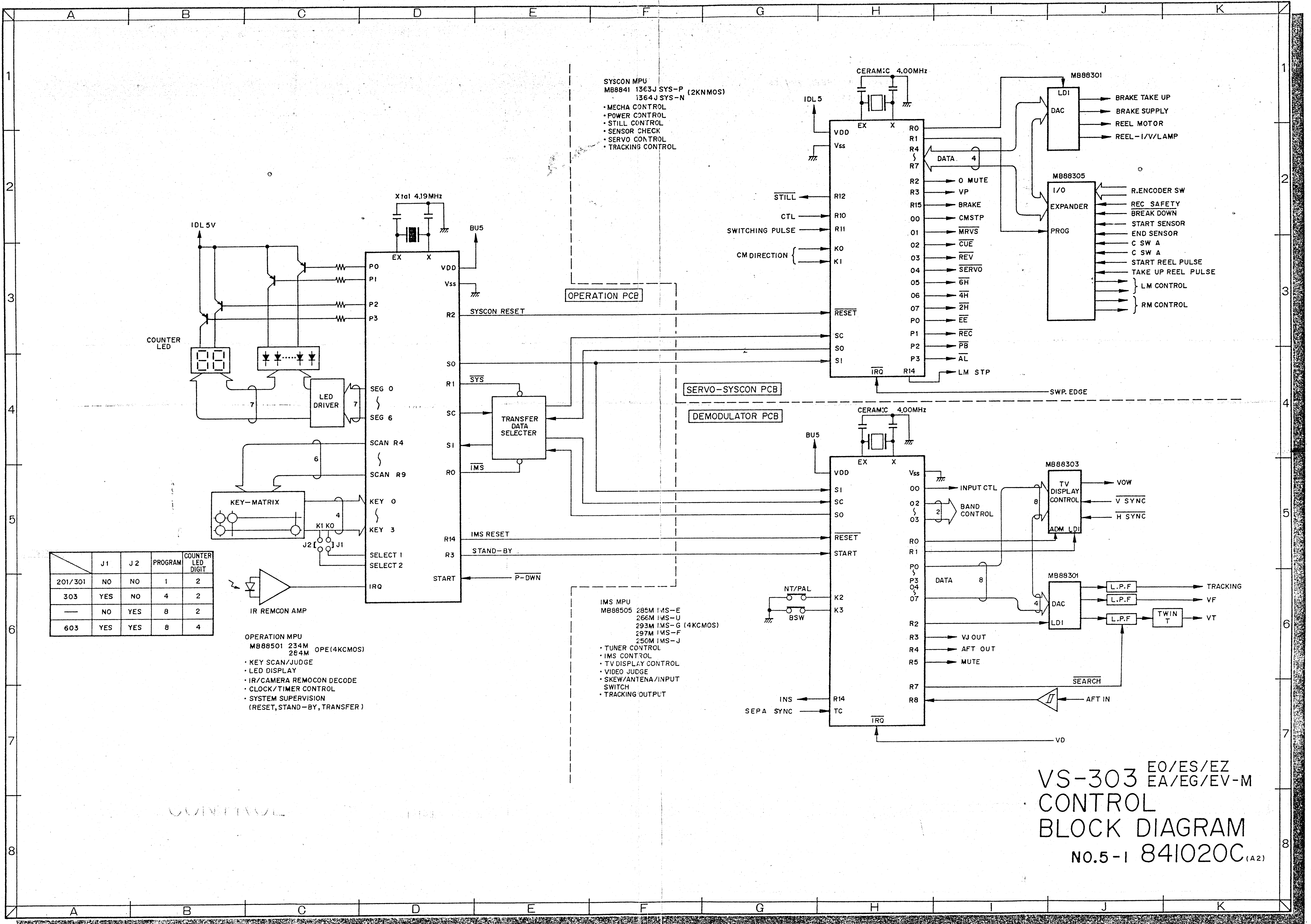
MB88301-A (D/A Converter)


DI0 2
DI1 3
DI2 4
DI3 5
EX tal 6
X tal 7
LDI 1
Vss 8
13 BIT DATA REGISTER
ADDRESS LATCH
DECODER
COINCIDENCE CIRCUIT
13 BIT COUNTER
6BIT COUNTER
6BIT COUNTER
6BIT COUNTER
COINCIDENCE SIR.
COINCIDENCE CIR.
COINCIDENCE CIR.
6BIT DATA REGISTER
6BIT DATA REGISTER
6BIT DATA REGISTER
9 TMO1
10 TMO2
11 TMO3
12 DAC1
13 DAC2
14 DAC3
15 DAC4
16 Vcc

MB88303M (Charactor Generator)


LDI 12
ADM 13
DO2 4
DO1 3
DO0 2
Vcc 22
DA7 21
DA6 20
DA5 19
DA4 18
DA3 17
DA2 16
DA1 15
DA0 14
RESET 1
Vss 11
ADDRESS MEMORY CONTROL
MEMORY ADDRESS REGISTER WITH +1 FUNCTION
OUTPUT LATCH
H. CHARACTER SIZE REGISTER
H. POSITION REGISTER
V. CHARACTER SIZE REGISTER
V. POSITION REGISTER
BLINKING REGISTER
H. CHARACTER SIZE CONTROL
H. INDICATE POSITION CONTROL
V. CHARACTER SIZE CONTROL
V. INDICATE POSITION CONTROL
BLINKING CONTROL
DATA MEMORY
INDICATE CHARACTER SELECTER
CHARACTER GENERATOR
CLOCK OSC
TIMING OSC
SHIFT REGISTER
INDICATION CONTROL
9 EX
10 X
8 H SYNC
7 V SYNC
5 VOW
6 VOB

9


A
B
C
D
E
F
G
H
I
J
K
1
2
3
4
5
6
7
8
IDL 5V
COUNTER LED
LED DRIVER
7
KEY-MATRIX
6
4
K1 K0
J2
J1
IR REMCON AMP
Xtal 4.19MHz
EX
X
BU5
P0
P1
P2
P3
SEG 0
SEG 6
SCAN R4
SCAN R9
KEY 0
KEY 3
SELECT 1
SELECT 2
IRQ
VDD
Vss
R2
S0
R1
SC
SI
R0
R14
R3
START
SYSCON RESET
SYS
IMS
IMS RESET
STAND-BY
P-DWN
TRANSFER DATA SELECTER
OPERATION PCB
SERVO-SYSCON PCB
DEMODULATOR PCB
CERAMIC 4.00MHz
IDL5
STILL
CTL
SWITCHING PULSE
CM DIRECTION
R12
R10
R11
K0
K1
RESET
SC
SO
SI
R0
R1
R4
R7
DATA 4
R2
R3
R15
00
01
02
03
04
05
06
07
P0
P1
P2
P3
IRQ
R14
0 MUTE
VP
BRAKE
CMSTP
MRVS
CUE
REV
SERVO
6H
4H
2H
EE
REC
PB
AL
LM STP
SWP. EDGE
MB88301
LDI
DAC
BRAKE TAKE UP
BRAKE SUPPLY
REEL MOTOR
REEL-I/V/LAMP
MB88305
I/O
EXPANDER
PROG
R.ENCODER SW
REC SAFETY
BREAK DOWN
START SENSOR
END SENSOR
C SW A
C SW A
START REEL PULSE
TAKE UP REEL PULSE
LM CONTROL
RM CONTROL
CERAMIC 4.00MHz
BU5
EX
X
VDD
Vss
SI
SC
SO
RESET
START
K2
K3
NT/PAL
BSW
R14
TC
INS
SEPA SYNC
IRQ
VD
00
02
03
2
INPUT CTL
BAND CONTROL
R0
R1
P0
P3
04
07
DATA 8
R2
R3
R4
R5
R7
R8
VJ OUT
AFT OUT
MUTE
SEARCH
AFT IN
MB88303
TV DISPLAY CONTROL
ADM
LDI
8
VOW
V SYNC
H SYNC
MB88301
DAC
LDI
4
L.P.F
L.P.F
L.P.F
TWIN T
TRACKING
VF
VT

	J1	J2	PROGRAM	COUNTER LED DIGIT
201/301	NO	NO	1	2
303	YES	NO	4	2
—	NO	YES	8	2
603	YES	YES	8	4

SYSCON MPU
MB8841 1363J SYS-P
1364J SYS-N (2KNMOS)
- MECHA CONTROL
- POWER CONTROL
- STILL CONTROL
- SENSOR CHECK
- SERVO CONTROL
- TRACKING CONTROL

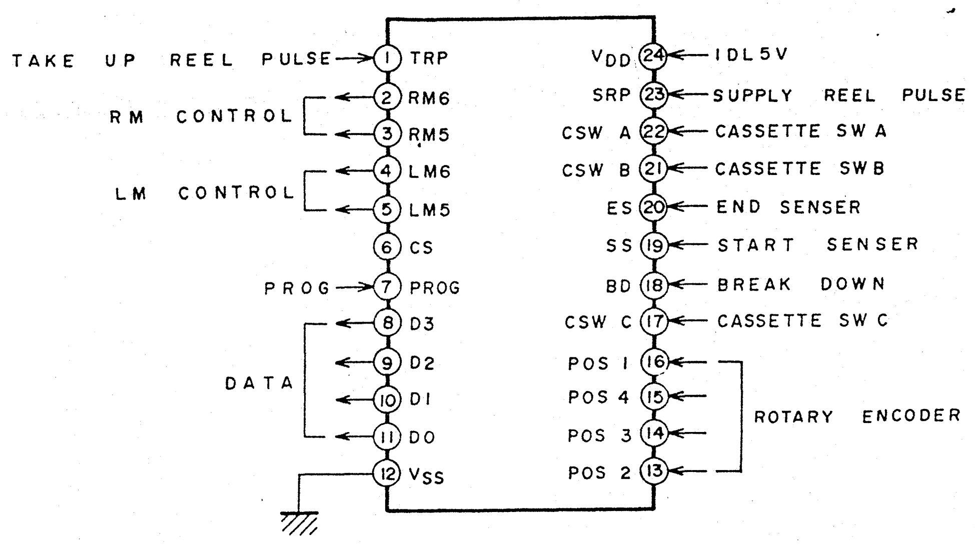
OPERATION MPU
MB88501 234M
284M OPE(4KCMOS)
- KEY SCAN/JUDGE
- LED DISPLAY
- IR/CAMERA REMOCON DECODE
- CLOCK/TIMER CONTROL
- SYSTEM SUPERVISION (RESET, STAND-BY, TRANSFER)

IMS MPU
MB88505 285M IMS-E
266M IMS-U
293M IMS-G (4KCMOS)
297M IMS-F
250M IMS-J
- TUNER CONTROL
- IMS CONTROL
- TV DISPLAY CONTROL
- VIDEO JUDGE
- SKEW/ANTENA/INPUT SWITCH
- TRACKING OUTPUT

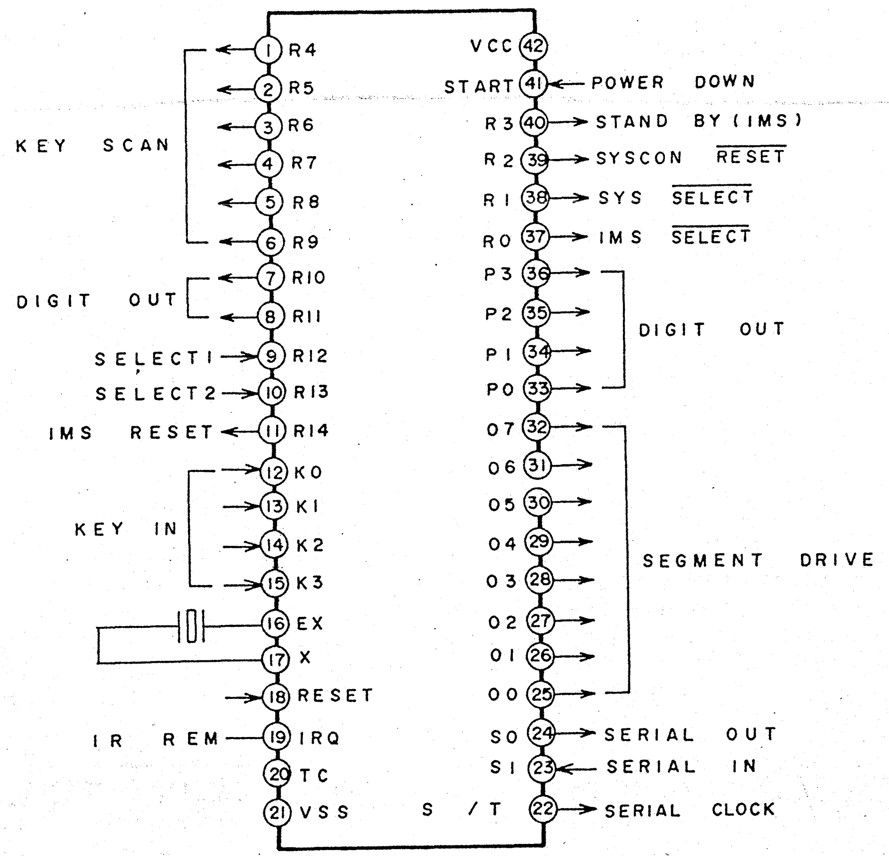
VS-303 EO/ES/EZ EA/EG/EV-M
CONTROL
BLOCK DIAGRAM

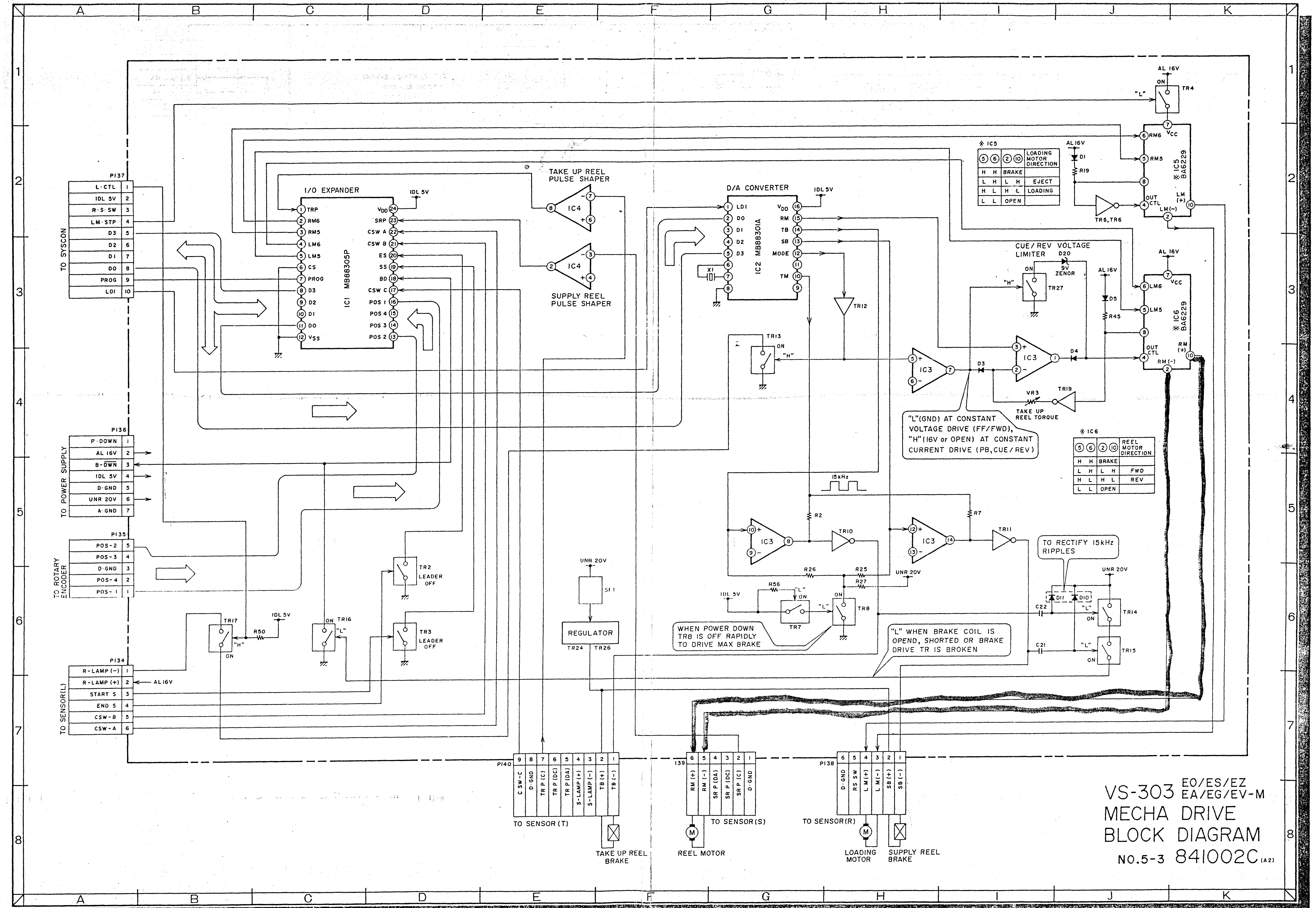
NO.5-1 841020C(A2)

MB88305P (Mecha Drive)


TAKE UP REEL PULSE
1 TRP
RM CONTROL
2 RM6
3 RM5
LM CONTROL
4 LM6
5 LM5
6 CS
PROG
7 PROG
DATA
8 D3
9 D2
10 D1
11 D0
12 VSS
VDD 24
IDL5V
SRP 23
SUPPLY REEL PULSE
CSW A 22
CASSETTE SW A
CSW B 21
CASSETTE SW B
ES 20
END SENSER
SS 19
START SENSER
BD 18
BREAK DOWN
CSW C 17
CASSETTE SW C
POS 1 16
POS 4 15
POS 3 14
POS 2 13
ROTARY ENCODER

MB88501 (Operation)


KEY SCAN
1 R4
2 R5
3 R6
4 R7
5 R8
6 R9
DIGIT OUT
7 R10
8 R11
SELECT1
9 R12
SELECT2
10 R13
IMS RESET
11 R14
KEY IN
12 K0
13 K1
14 K2
15 K3
16 EX
17 X
18 RESET
IR REM
19 IRQ
20 TC
21 VSS
VCC 42
START 41
POWER DOWN
R3 40
STAND BY (IMS)
R2 39
SYSCON RESET
R1 38
SYS SELECT
R0 37
IMS SELECT
P3 36
P2 35
P1 34
P0 33
DIGIT OUT
O7 32
O6 31
O5 30
O4 29
O3 28
O2 27
O1 26
O0 25
SEGMENT DRIVE
SO 24
SERIAL OUT
SI 23
SERIAL IN
S/T 22
SERIAL CLOCK


A B C D E F G H I J K
1 2 3 4 5 6 7 8
TO SYSCON
P137
L·CTL 1
IDL 5V 2
R·S·SW 3
LM·STP 4
D3 5
D2 6
D1 7
D0 8
PROG 9
LD1 10
TO POWER SUPPLY
P136
P·DOWN 1
AL 16V 2
B·DWN 3
IDL 5V 4
D·GND 5
UNR 20V 6
A·GND 7
TO ROTARY ENCODER
P135
POS-2 5
POS-3 4
D·GND 3
POS-4 2
POS-1 1
TO SENSOR(L)
P134
R-LAMP(-) 1
R-LAMP(+) 2
START S 3
END S 4
CSW-B 5
CSW-A 6
AL 16V
I/O EXPANDER
IC1 MB88305P
TRP RM6 RM5 LM6 LM5 CS PROG D3 D2 D1 D0 VSS
VDD SRP CSW A CSW B ES SS BD CSW C POS 1 POS 4 POS 3 POS 2
IDL 5V
TAKE UP REEL PULSE SHAPER
IC4
SUPPLY REEL PULSE SHAPER
IC4
D/A CONVERTER
IC2 MB88301A
LD1 D0 D1 D2 D3
VDD RM TB SB MODE TM
X1
IDL 5V
TR12
TR13
ON
"H"
IC3
D3
D4
VR3
TR19
TAKE UP REEL TORQUE
"L"(GND) AT CONSTANT VOLTAGE DRIVE (FF/FWD), "H"(16V or OPEN) AT CONSTANT CURRENT DRIVE (PB, CUE/REV)
CUE/REV VOLTAGE LIMITER
D20
9V ZENOR
TR27
ON
"H"
AL 16V
D5
R45
※IC6 BA6229
LM6 LM5 VCC OUT CTL RM(+) RM(-)
AL 16V
TR4
ON
"L"
※IC5 BA6229
RM6 RM5 VCC OUT CTL LM(+) LM(-)
AL16V
D1
R19
TR5, TR6
15kHz
R2
R7
IC3
TR10
TR11
R26
R25
R27
R56
UNR 20V
IDL 5V
TR7
TR8
ON
"L"
WHEN POWER DOWN TR8 IS OFF RAPIDLY TO DRIVE MAX BRAKE
"L" WHEN BRAKE COIL IS OPEND, SHORTED OR BRAKE DRIVE TR IS BROKEN
TO RECTIFY 15kHz RIPPLES
D11
D10
C22
C21
UNR 20V
TR14
TR15
ON
UNR 20V
SF1
REGULATOR
TR24 TR26
TR17
R50
IDL 5V
"H"
ON
TR16
"L"
TR2 LEADER OFF
TR3 LEADER OFF
P140
9 8 7 6 5 4 3 2 1
C SW-C
D·GND
TR P (C)
TR P (DC)
TR P (DA)
S-LAMP (+)
S-LAMP (-)
TB (+)
TB (-)
TO SENSOR (T)
TAKE UP REEL BRAKE
139
6 5 4 3 2 1
RM (+)
RM (-)
SR P (DA)
SR P (DC)
SR P (C)
D·GND
TO SENSOR (S)
REEL MOTOR
M
P138
6 5 4 3 2 1
D·GND
RS SW
L M (+)
L M (-)
SB (+)
SB (-)
TO SENSOR (R)
LOADING MOTOR
SUPPLY REEL BRAKE

※ IC5

⑤	⑥	②	⑩	LOADING MOTOR DIRECTION
H	H	BRAKE		
L	H	L	H	EJECT
H	L	H	L	LOADING
L	L	OPEN		

※ IC6

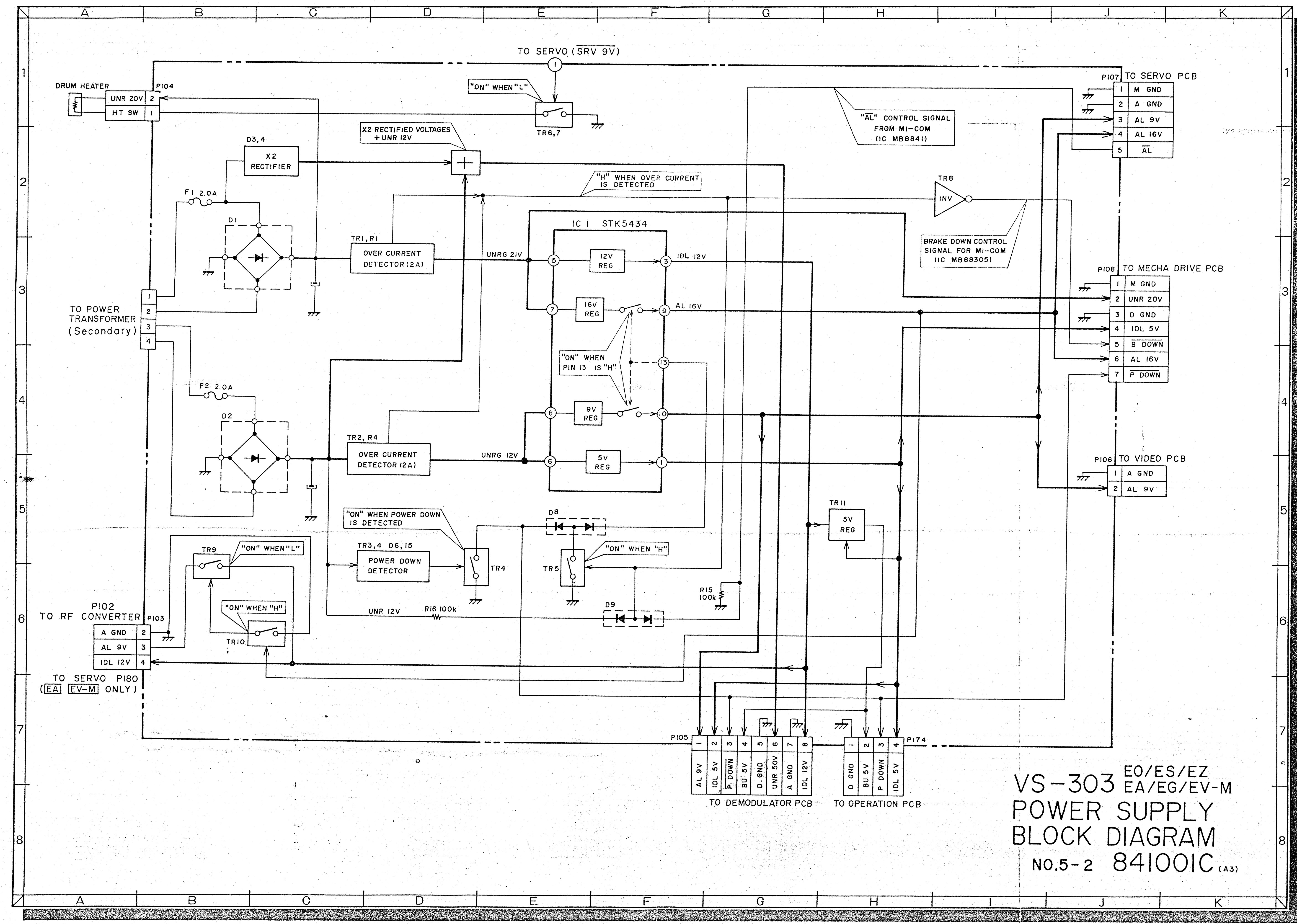
⑤	⑥	②	⑩	REEL MOTOR DIRECTION
H	H	BRAKE		
L	H	L	H	FWD
H	L	H	L	REV
L	L	OPEN		

VS-303 EO/ES/EZ
EA/EG/EV-M

MECHA DRIVE BLOCK DIAGRAM

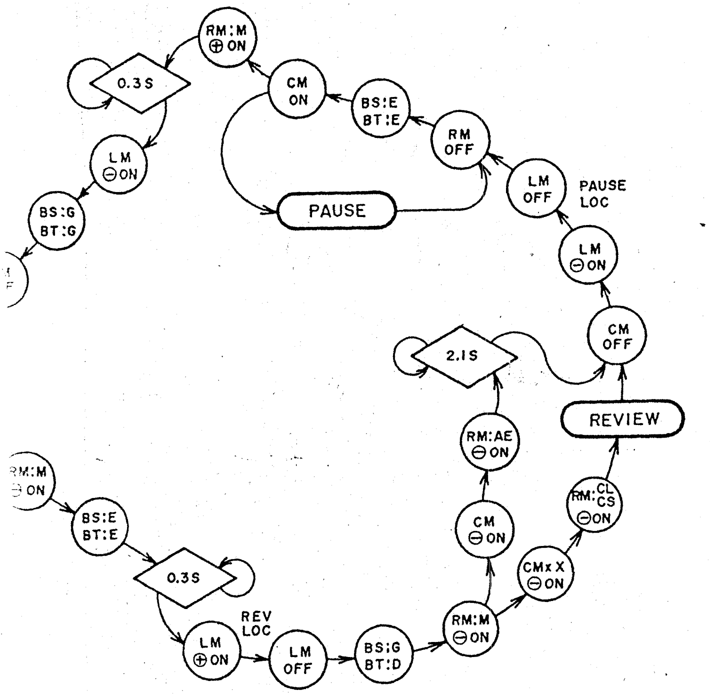
NO.5-3 841002C (A2)

8


TO SERVO (SRV 9V)
"ON" WHEN "L"
TR6,7
DRUM HEATER
UNR 20V
HT SW
P104
X2 RECTIFIED VOLTAGES + UNR 12V
D3, 4
X2 RECTIFIER
F1 2.0A
D1
"H" WHEN OVER CURRENT IS DETECTED
TR1, R1
OVER CURRENT DETECTOR (2A)
UNRG 21V
IC 1 STK5434
12V REG
IDL 12V
16V REG
AL 16V
"ON" WHEN PIN 13 IS "H"
9V REG
5V REG
TO POWER TRANSFORMER (Secondary)
F2 2.0A
D2
TR2, R4
OVER CURRENT DETECTOR (2A)
UNRG 12V
"AL" CONTROL SIGNAL FROM MI-COM (IC MB8841)
TR8
INV
BRAKE DOWN CONTROL SIGNAL FOR MI-COM (IC MB88305)
P107 TO SERVO PCB
M GND
A GND
AL 9V
AL 16V
AL
P108 TO MECHA DRIVE PCB
M GND
UNR 20V
D GND
IDL 5V
B DOWN
AL 16V
P DOWN
P106 TO VIDEO PCB
A GND
AL 9V
"ON" WHEN POWER DOWN IS DETECTED
TR3,4 D6,15
POWER DOWN DETECTOR
TR4
D8
"ON" WHEN "H"
TR5
R15 100k
D9
UNR 12V
R16 100k
TR9
"ON" WHEN "L"
"ON" WHEN "H"
TR10
P102 TO RF CONVERTER
P103
A GND
AL 9V
IDL 12V
TO SERVO P180 (EA EV-M ONLY)
TR11
5V REG
P105
AL 9V
IDL 5V
P. DOWN
BU 5V
D GND
UNR 50V
A GND
IDL 12V
TO DEMODULATOR PCB
P174
D GND
BU 5V
P. DOWN
IDL 5V
TO OPERATION PCB
A B C D E F G H I J K
1 2 3 4 5 6 7 8

VS-303 EO/ES/EZ EA/EG/EV-M
POWER SUPPLY BLOCK DIAGRAM

NO.5-2 84100IC (A3)


RM:M ⊕ON
0.3S
CM ON
BS:E BT:E
RM OFF
LM OFF
PAUSE LOC
PAUSE
LM ⊖ON
BS:G BT:G
CM OFF
2.1S
REVIEW
RM:AE ⊖ON
CM ⊖ON
RM:CL CS ⊖ON
CMxX ⊖ON
RM:M ⊖ON
BS:E BT:E
0.3S
REV LOC
LM ⊕ON
LM OFF
BS:G BT:D
RM:M ⊖ON

IONS

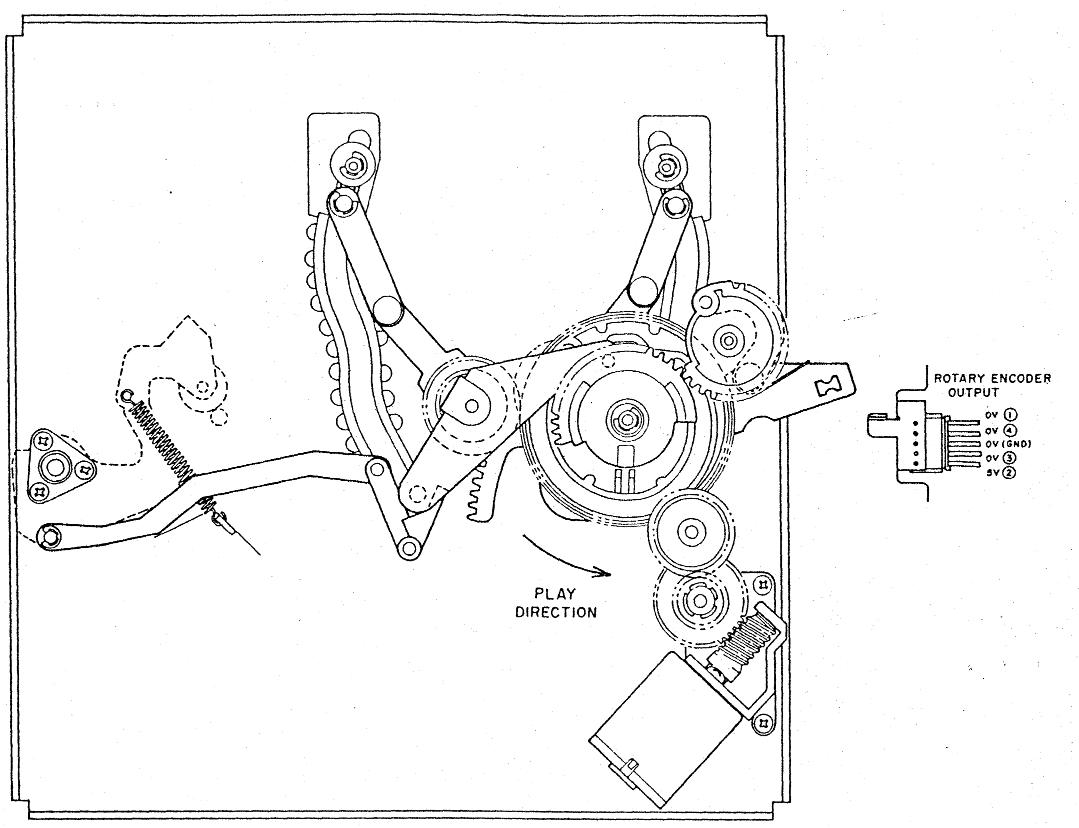
Voltage Drive Mode
on Change

e

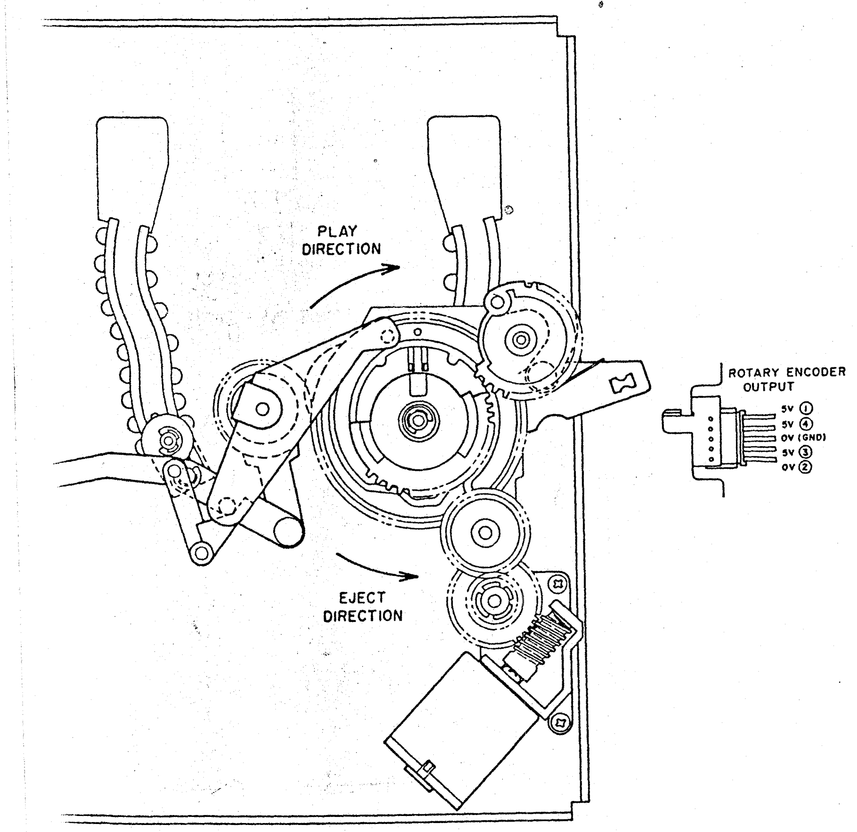
EV

rque
To STOP(Supply Side)
To STOP(Winding Side)
sion
ake
Tension(Supply Side)
Up Side)

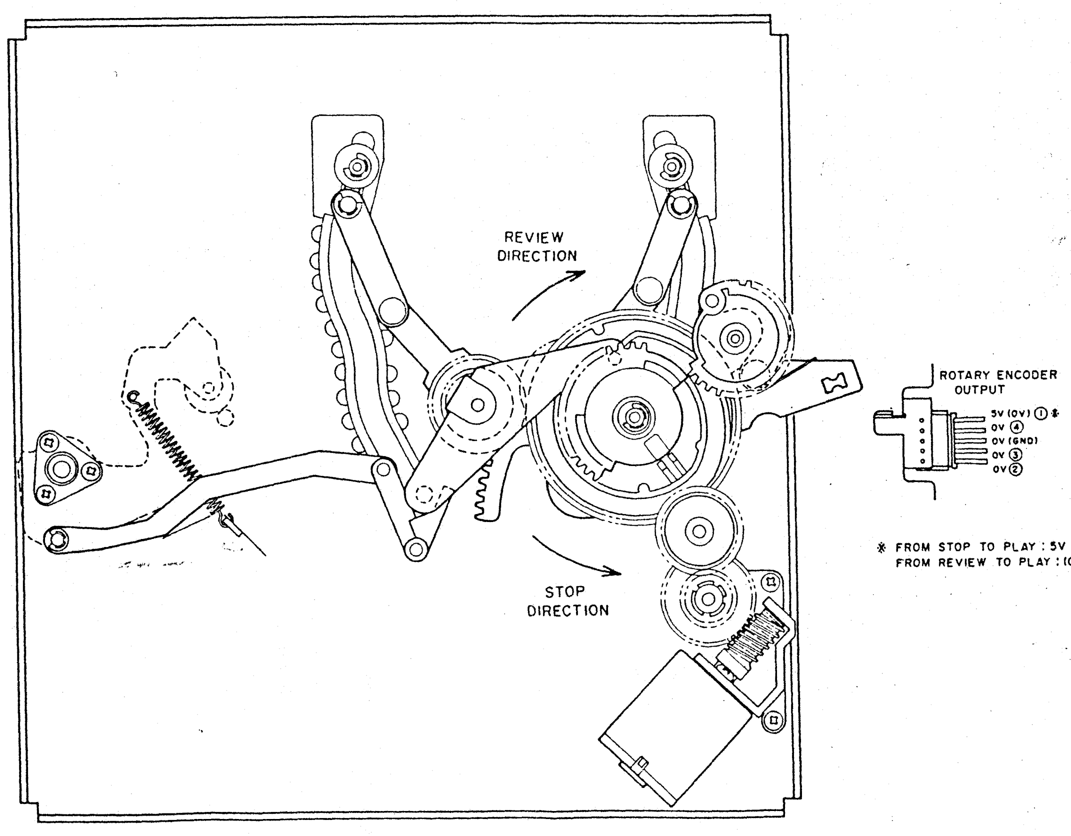
DM : Drum Motor
CM : Capstan Motor
BT : Take Up Magnetic Brake
BS : Supply Magnetic Brake
RM : Reel Motor
LM : Loading Motor
FOFE : Ejected Function Off
(Without Tape)
FOFS : Stopped Function Off
(With Tape)
AL : Always Function
LOC : Location(Detecting Rotary Encoder)
TLD : Tape Loading
TUL : Tape Unloading
LM ⊕ ON : Loading Motor Rotation
(Loading Direction)
RM ⊕ ON : Reel Motor Rotation
(PLAY Direction)
CMxX ⊕ ON : Capstan Motor Speedy Rotation
(CUE Direction)


PLAY DIRECTION
ROTARY ENCODER OUTPUT
0V ①
0V ④
0V (GND)
0V ③
5V ②

REVIEW


PLAY DIRECTION
EJECT DIRECTION
ROTARY ENCODER OUTPUT
5V ①
5V ④
0V (GND)
5V ③
0V ②

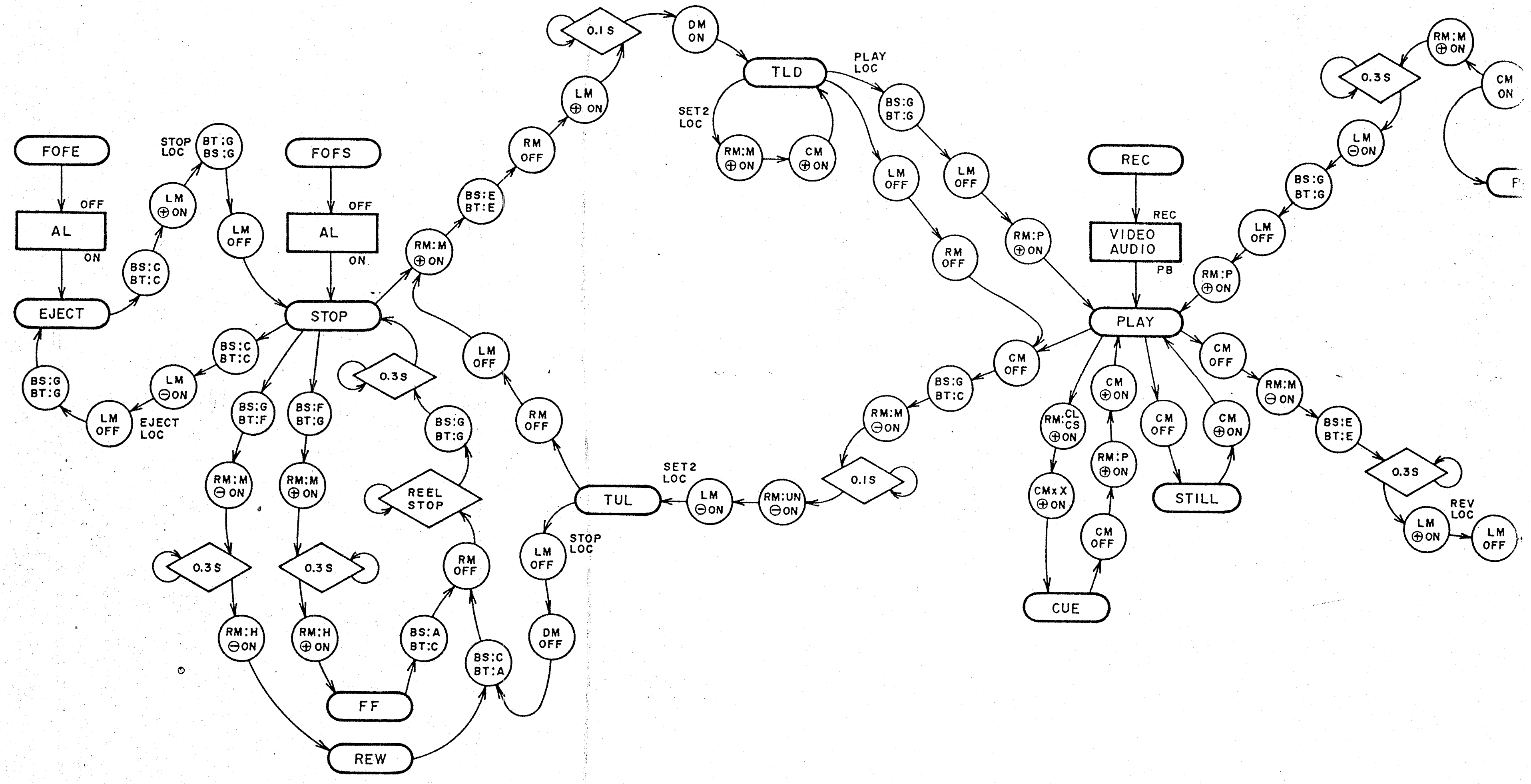
STOP (TAPE IN)

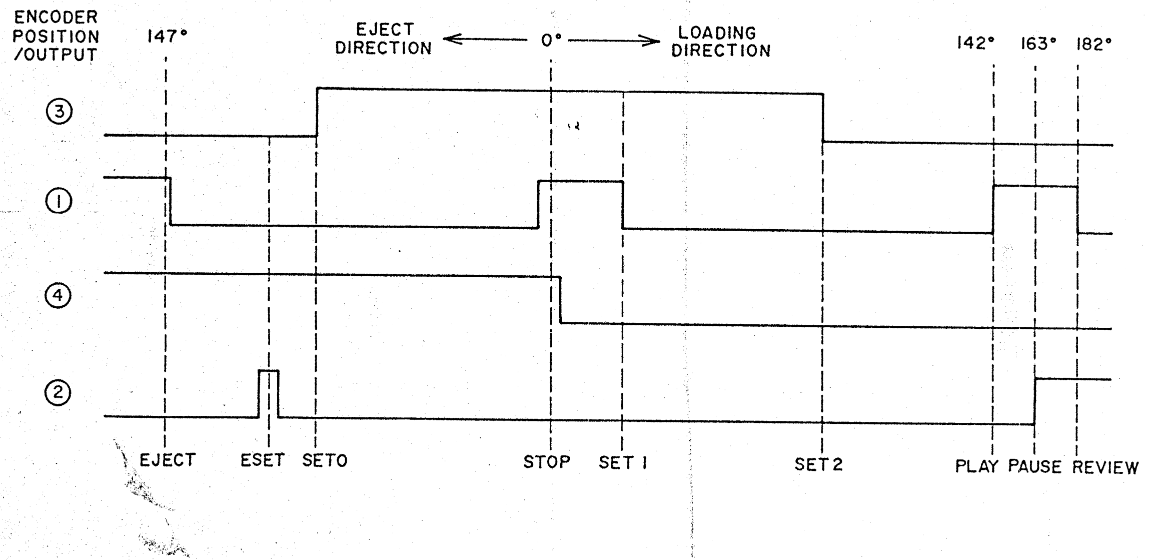

REVIEW DIRECTION
STOP DIRECTION
ROTARY ENCODER OUTPUT
5V (0V) ① ※
0V ④
0V (GND)
0V ③
0V ②

※ FROM STOP TO PLAY : 5V
FROM REVIEW TO PLAY : (0V)

PLAY

MECHA MODE AND ACTIONFLOW


FOFE
AL
OFF
ON
EJECT
BS:G BT:G
LM OFF
EJECT LOC
LM ⊖ON
BS:C BT:C
LM ⊕ON
STOP LOC
BT:G BS:G
LM OFF
FOFS
AL
OFF
ON
STOP
BS:C BT:C
BS:G BT:F
BS:F BT:G
RM:M ⊖ ON
RM:M ⊕ON
0.3S
0.3S
RM:H ⊖ON
RM:H ⊕ON
FF
REW
BS:A BT:C
BS:C BT:A
RM OFF
REEL STOP
BS:G BT:G
0.3S
LM OFF
RM OFF
RM:M ⊕ON
BS:E BT:E
RM OFF
LM ⊕ ON
0.1S
DM ON
TLD
SET2 LOC
RM:M ⊕ON
CM ⊕ON
PLAY LOC
BS:G BT:G
LM OFF
LM OFF
RM OFF
RM:P ⊕ON
TUL
STOP LOC
LM OFF
DM OFF
SET2 LOC
LM ⊖ON
RM:UN ⊖ON
0.1S
RM:M ⊖ON
BS:G BT:C
CM OFF
REC
VIDEO AUDIO
REC
PB
PLAY
RM:CL CS ⊕ON
CMxX ⊕ON
CUE
CM ⊕ON
RM:P ⊕ON
CM OFF
CM OFF
STILL
CM ⊕ON
CM OFF
RM:M ⊖ ON
BS:E BT:E
0.3S
REV LOC
LM ⊕ON
LM OFF
RM:P ⊕ON
LM OFF
BS:G BT:G
LM ⊖ON
0.3S
RM:M ⊕ON
CM ON

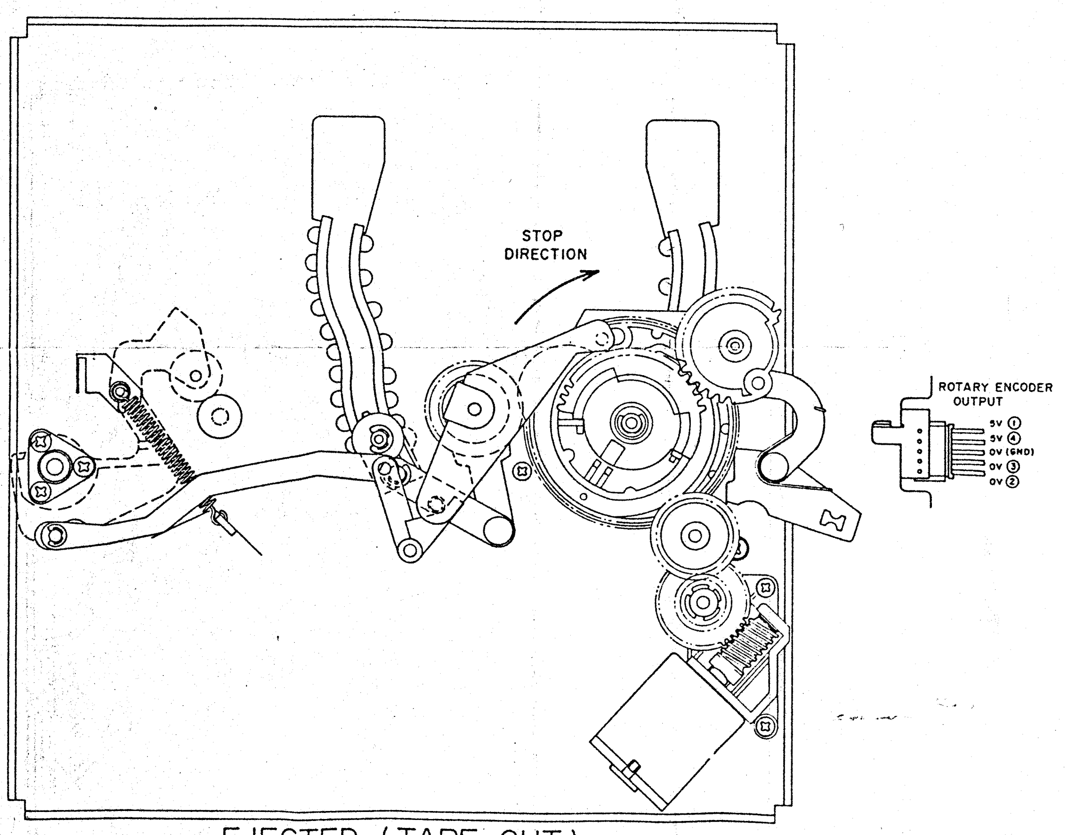


ABBREVIATIONS

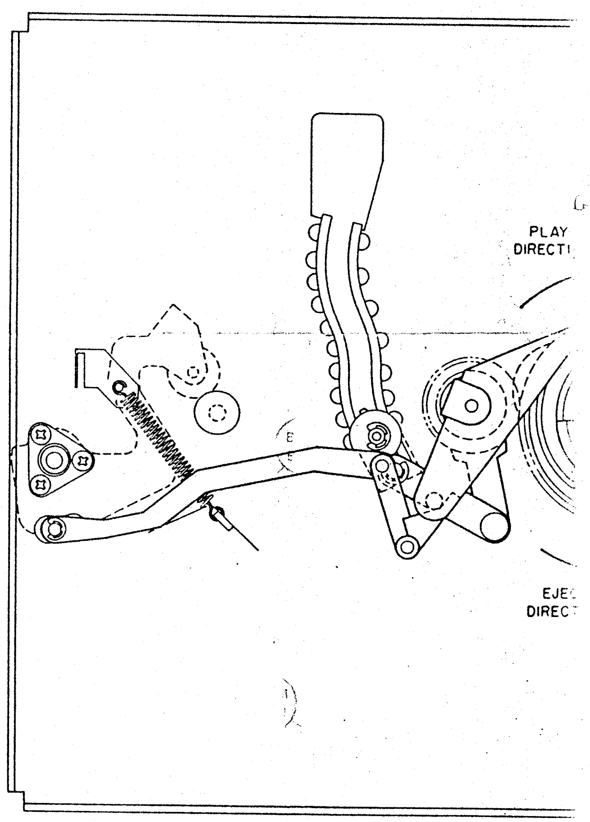
Reel Motor Torque Voltage Drive Mode
M : Idler Position Change
H : FF REW

Current Drive Mode
CL : LP CUE REV
AE : AEC
P : PLAY REC
UN : Unloading
CS : SP LP CUE REV

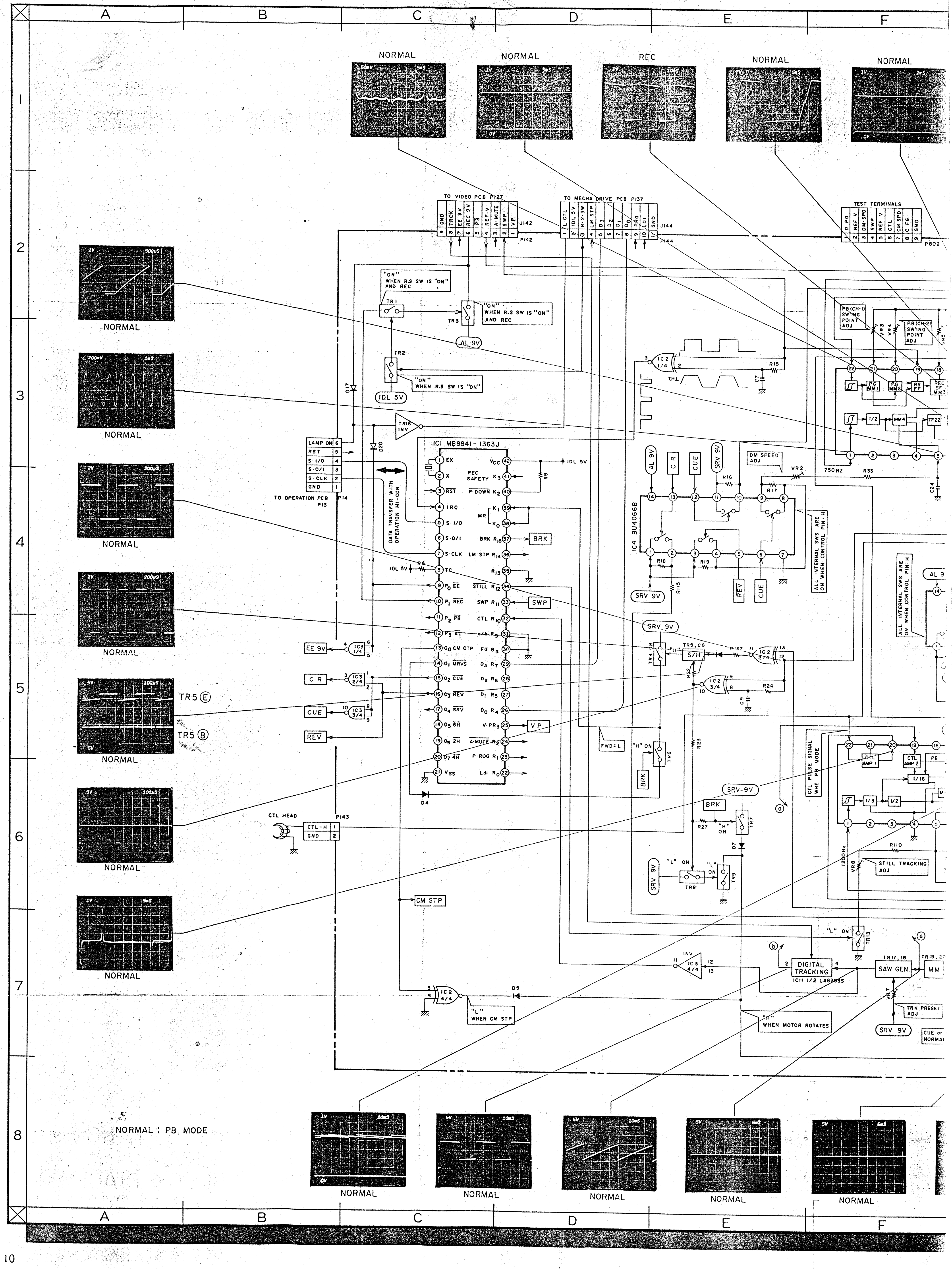
Magnetic Brake Torque
A : From FF REW To STOP(Supply Side)
Increase C : From FF REW To STOP(Winding Side)
D : REV Back Tension
E : Unloading Brake
Decrease F : FF REW Back Tension(Supply Side)
G : FF RWD(Take Up Side)

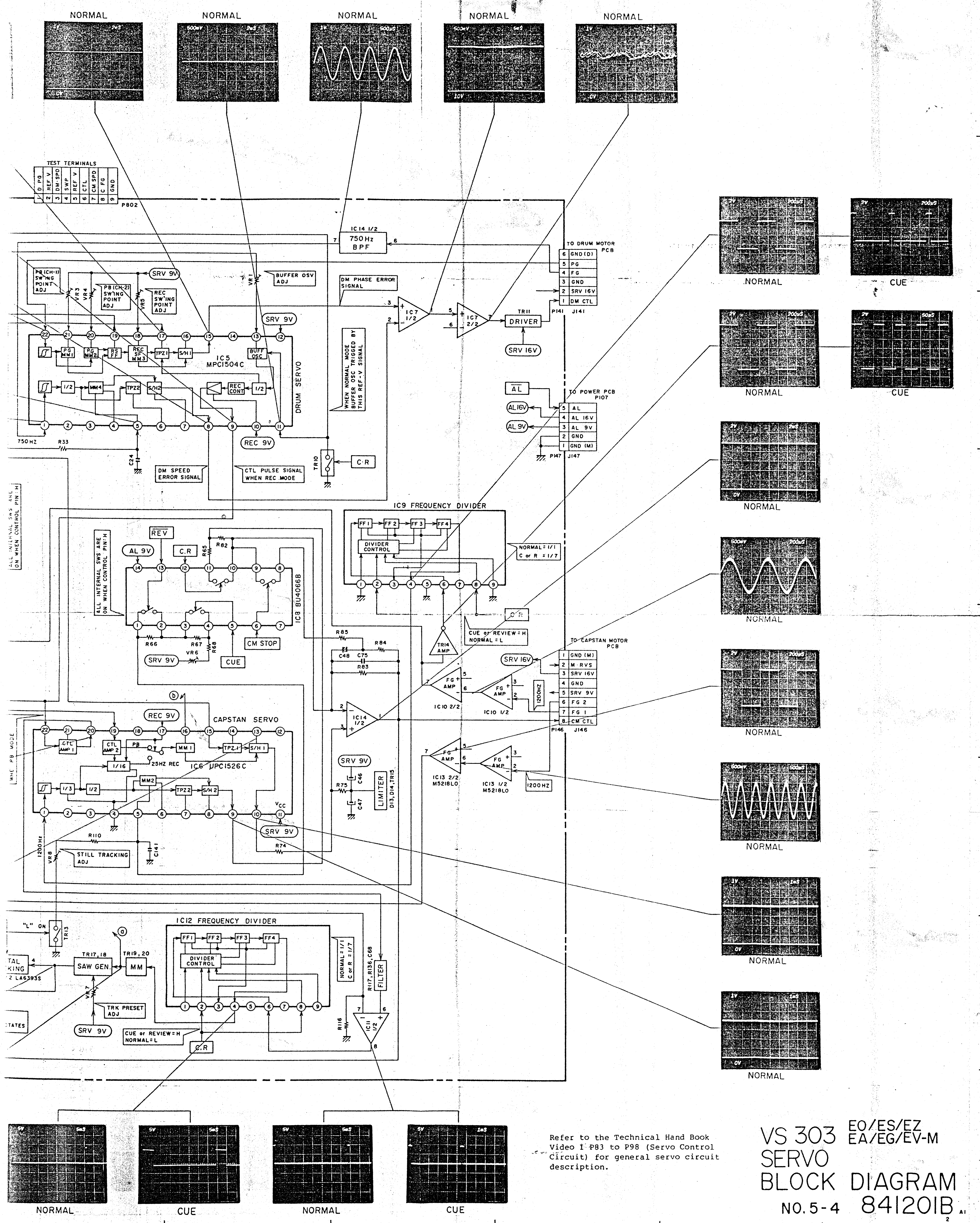

STOP DIRECTION
ROTARY ENCODER OUTPUT
5V ①
5V ④
0V (GND)
0V ③
0V ②

EJECTED (TAPE OUT)


PLAY DIRECTI
EJE DIREC

STOP (TAPE IN)

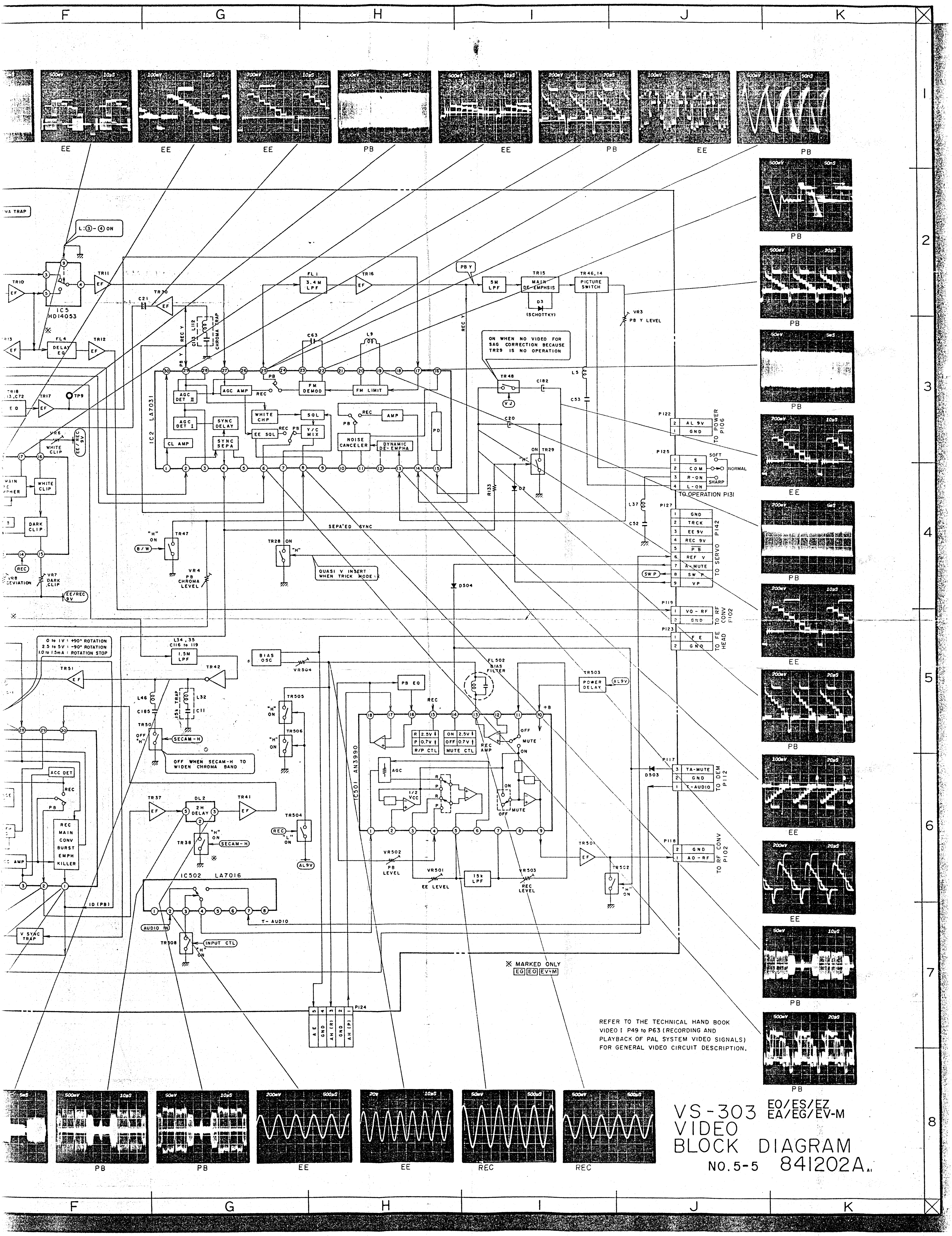

A
B
C
D
E
F
1
2
3
4
5
6
7
8
NORMAL
REC
TR5 Ⓔ
TR5 Ⓑ
NORMAL : PB MODE
TO VIDEO PCB P127
9 GND
8 TRCK
7 EE 9V
6 REC 9V
5 PB
4 REF-V
3 A·MUTE
2 SWP
1 VP
J142
P142
TO MECHA DRIVE PCB P137
1 L·CTL
2 IDL 5V
3 R·S·SW
4 LM STP
5 D3
6 D2
7 D1
8 D0
9 PRG
10 LDI
11 GND
J144
P144
TEST TERMINALS
1 D PG
2 REF V
3 DM·SPD
4 SWP
5 REF V
6 CTL
7 CM SPD
8 C FG
9 GND
P802
"ON" WHEN R.S SW IS "ON" AND REC
TR1
TR3
TR2
"ON" WHEN R.S SW IS "ON"
AL 9V
IDL 5V
D17
D20
TR16 INV
LAMP ON 6
RST 5
S·I/O 4
S·O/I 3
S·CLK 2
GND 1
TO OPERATION PCB P13
P14
DATA TRANSFER WITH OPERATION MI-CON
IC1 MB8841-1363J
EX
X
RST
IRQ
S·I/O
S·O/I
S·CLK
TC
P0 EE
P1 REC
P2 PB
P3 AL
O0 CM CTP
O1 MRVS
O2 CUE
O3 REV
O4 SRV
O5 8H
O6 2H
O7 4H
VSS
VCC
REC SAFETY K3
P·DOWN K2
MR K1
K0
BRK R16
LM STP R14
R13
STILL R12
SWP R11
CTL R10
ø/b R9
FG R8
D3 R7
D2 R6
D1 R5
D0 R4
V·PR3
A·MUTE R2
P·ROG R1
Ldi R0
R6
R9
BRK
SWP
VP
EE 9V
C·R
CUE
REV
IC3 1/4
IC3 2/4
IC3 3/4
D4
CTL HEAD
CTL-H
GND
P143
CM STP
IC2 4/4
D5
"L" WHEN CM STP
IC2 1/4
R15
C7
T.H.L
IC4 BU4066B
R18
R19
R115
R16
R17
SRV 9V
DM SPEED ADJ
VR2
750HZ
R33
C24
ALL INTERNAL SWS ARE ON WHEN CONTROL PIN:H
TR4 ON
TR5, C8
S/H
R137
IC2 2/4
IC2 3/4
R22
R24
C9
"H" ON
TR6
FWD=L
R23
SRV-9V
TR7
R27
D7
"L" ON
TR8
TR9
CTL PULSE SIGNAL WHE PB MODE
CTL AMP 1
CTL AMP 2
PB
1/16
1/3
1/2
1200Hz
R110
VR8
STILL TRACKING ADJ
TR13
INV
IC3 4/4
DIGITAL TRACKING
IC11 1/2 LA6393S
SAW GEN
TR17,18
TR19, 20
MM
VR7
TRK PRESET ADJ
CUE or NORMAL
"H" WHEN MOTOR ROTATES
PB(CH-1) SW'NG POINT ADJ
PB(CH-2) SW'NG POINT ADJ
VR3
VR4
PG MM1
PG MM2
RS FF
REC SF MM3
MM4
TPZ2
1V 500μS
200mV 1mS
2V 200μS
5V 100μS
1V 5mS
1V 10mS
5V 10mS
5V 5mS
0V


NORMAL
CUE
TEST TERMINALS
1 D PG
2 REF V
3 DM SPD
4 SWP
5 REF V
6 CTL
7 CM SPD
8 C FG
9 GND
P802
IC14 1/2
750 Hz BPF
TO DRUM MOTOR PCB
6 GND (D)
5 PG
4 FG
3 GND
2 SRV 16V
1 DM CTL
P141 J141
PB (CH-1) SW'ING POINT ADJ
PB (CH-2) SW'ING POINT ADJ
REC SW'ING POINT ADJ
BUFFER OSV ADJ
VR1
VR3
VR4
VR5
SRV 9V
DM PHASE ERROR SIGNAL
IC7 1/2
IC7 2/2
TR11
DRIVER
SRV 16V
PG MM1
PG MM2
RS FF
REC SF MM3
TPZ1
S/H1
BUFF OSC
IC5
MPC1504C
DRUM SERVO
WHEN NORMAL MODE BUFFER OSC TRIGGED BY THIS REF-V SIGNAL
1/2
MM4
TPZ2
S/H2
REC CONT
AL
AL16V
AL 9V
TO POWER PCB P107
5 AL
4 AL 16V
3 AL 9V
2 GND
1 GND (M)
P147 J147
750 HZ
R33
C24
REC 9V
TR10
C·R
DM SPEED ERROR SIGNAL
CTL PULSE SIGNAL WHEN REC MODE
IC9 FREQUENCY DIVIDER
FF1
FF2
FF3
FF4
DIVIDER CONTROL
NORMAL = 1/1 C or R = 1/7
ALL INTERNAL SWS ARE ON WHEN CONTROL PIN: H
REV
AL 9V
C.R
R82
R65
IC8 BU4066B
R66
R67
R68
VR6
CUE
CM STOP
CUE or REVIEW = H NORMAL = L
TR14 AMP
R85
R84
C48
C75
R83
TO CAPSTAN MOTOR PCB
1 GND (M)
2 M·RVS
3 SRV 16V
4 GND
5 SRV 9V
6 FG 2
7 FG 1
8 CM CTL
P146 J146
FG AMP
IC10 2/2
IC10 1/2
1200HZ
IC14 1/2
CAPSTAN SERVO
CTL AMP 1
CTL AMP 2
PB
25HZ REC
1/16
MM1
IC6 UPC1526C
1/3
MM2
TPZ2
S/H 2
VCC
R75
C46
C47
LIMITER
D13, D14, TR15
IC13 2/2 M5218LO
IC13 1/2 M5218LO
1200HZ
1200Hz
R110
C141
R74
VR8
STILL TRACKING ADJ
"L" ON
TR13
IC12 FREQUENCY DIVIDER
TR17, 18
SAW GEN.
TR19, 20
MM
VR7
TRK PRESET ADJ
2 LA6393S
R117, R136, C68
FILTER
IC11 1/2
R116
C.R
WHE PB MODE
F
G
H
I
J
K
1
2
3
4
5
6
7
8

Refer to the Technical Hand Book Video I P83 to P98 (Servo Control Circuit) for general servo circuit description.

VS 303 EO/ES/EZ EA/EG/EV-M
SERVO
BLOCK DIAGRAM

NO. 5-4 841201B A1 2

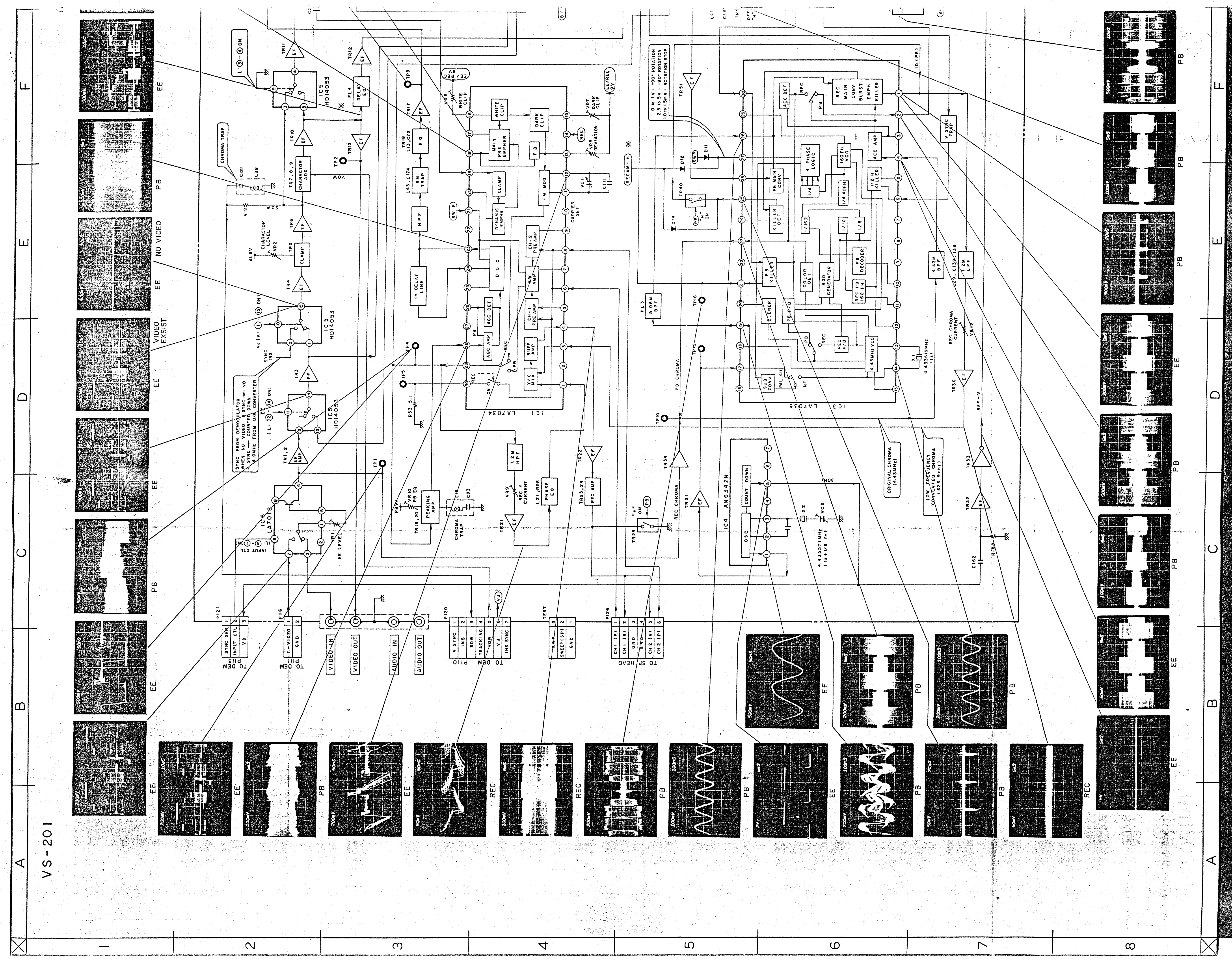

F
G
H
I
J
K
1
2
3
4
5
6
7
8
EE
PB
REC
500mV
100mV
200mV
50mV
20V
10μS
20μS
5μS
50nS
500μS
IC5 HD14053
L:③-④ ON
TR10
TR11
TR12
TR13
TR16
TR17
TR18
TP9
EF
FL4 DELAY EQ
FL1 3.4M LPF
C21
TR30
REC Y
PB Y
C12, L112
CHROMA TRAP
IC2 LA7031
CL AMP
AGC DET I
AGC DET II
SYNC DELAY
SYNC SEPA
AGC AMP
WHITE CHP
EE SQL
Y/C MIX
SQL
FM DEMOD
FM LIMIT
NOISE CANCELER
DYNAMIC DE-EMPHA
AMP
PD
C63
L9
5M LPF
TR15 MAIN DE-EMPHSIS
D3 (SCHOTTKY)
TR46, 14 PICTURE SWITCH
VR3 PB Y LEVEL
ON WHEN NO VIDEO FOR SAG CORRECTION BECAUSE TR29 IS NO OPERATION
TR48
VJ
C182
C20
TR29
R133
D2
L5
C53
L37
C52
WHITE CLIP
DARK CLIP
VR6
VR7 DARK CLIP
VR8 DEVIATION
EE/REC 9V
B/W
TR47
VR4 PB CHROMA LEVEL
TR28 ON
QUASI V INSERT WHEN TRICK MODE
SEPA'ED SYNC
D504
0 to 1V : +90° ROTATION
2.5 to 5V : -90° ROTATION
1.0 to 1.5mA : ROTATION STOP
L34, 35 C116 to 119
1.5M LPF
TR42
TR51
L46
C185
15k TRAP
L32
C11
TR50
SECAM-H
OFF WHEN SECAM-H TO WIDEN CHROMA BAND
BIAS OSC
VR504
TR505
TR506
TR504
AL9V
FL502 BIAS FILTER
TR503 POWER DELAY
IC501 AN3990
PB EQ
R/P CTL
MUTE CTL
REC AMP
MUTE
AGC
1/2 VCC
VR502 PB LEVEL
VR501 EE LEVEL
15k LPF
VR503 REC LEVEL
TR501
TR502
ACC DET
REC MAIN CONV BURST EMPH KILLER
ID (PB)
V SYNC TRAP
TR37
DL2 2H DELAY
TR41
TR38
IC502 LA7016
AUDIO IN
INPUT CTL
TR508
T-AUDIO
P124
AE
GND
AH (R)
AH (P)
P122
AL 9V
TO POWER P106
P125
S
COM
R-ON
L-ON
SOFT
NORMAL
SHARP
TO OPERATION P131
P127
TRCK
EE 9V
REC 9V
REF V
A-MUTE
SW P
VP
TO SERVO P142
P119
VO-RF
TO RF CONV P102
P123
FE
TO FE HEAD
P117
TA-MUTE
TO DEM P112
D503
P118
AO-RF

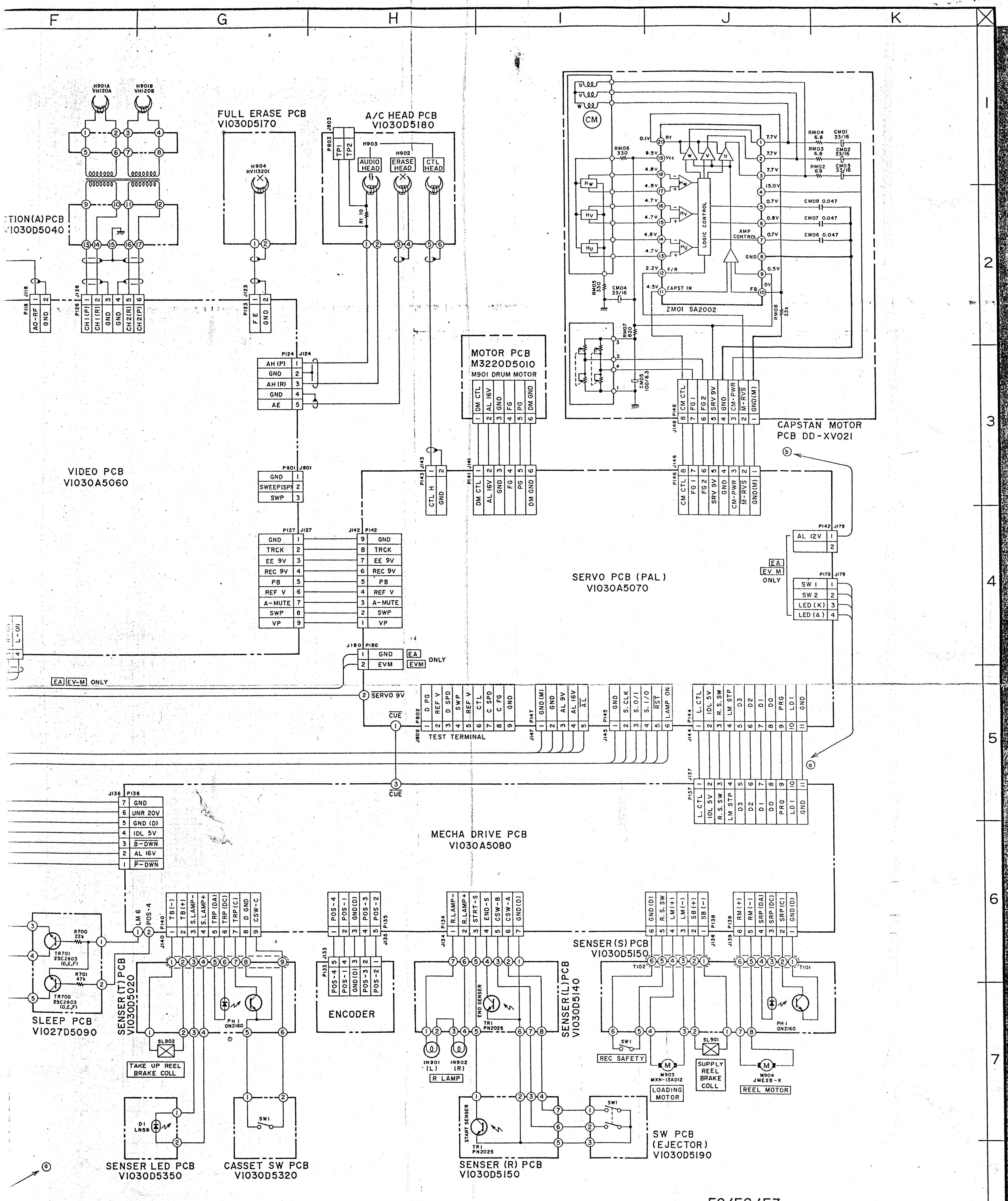
※ MARKED ONLY EG EO EV-M

REFER TO THE TECHNICAL HAND BOOK VIDEO I P49 to P63 (RECORDING AND PLAYBACK OF PAL SYSTEM VIDEO SIGNALS) FOR GENERAL VIDEO CIRCUIT DESCRIPTION.

VS-303 EO/ES/EZ EA/EG/EV-M
VIDEO BLOCK DIAGRAM

NO.5-5 841202A

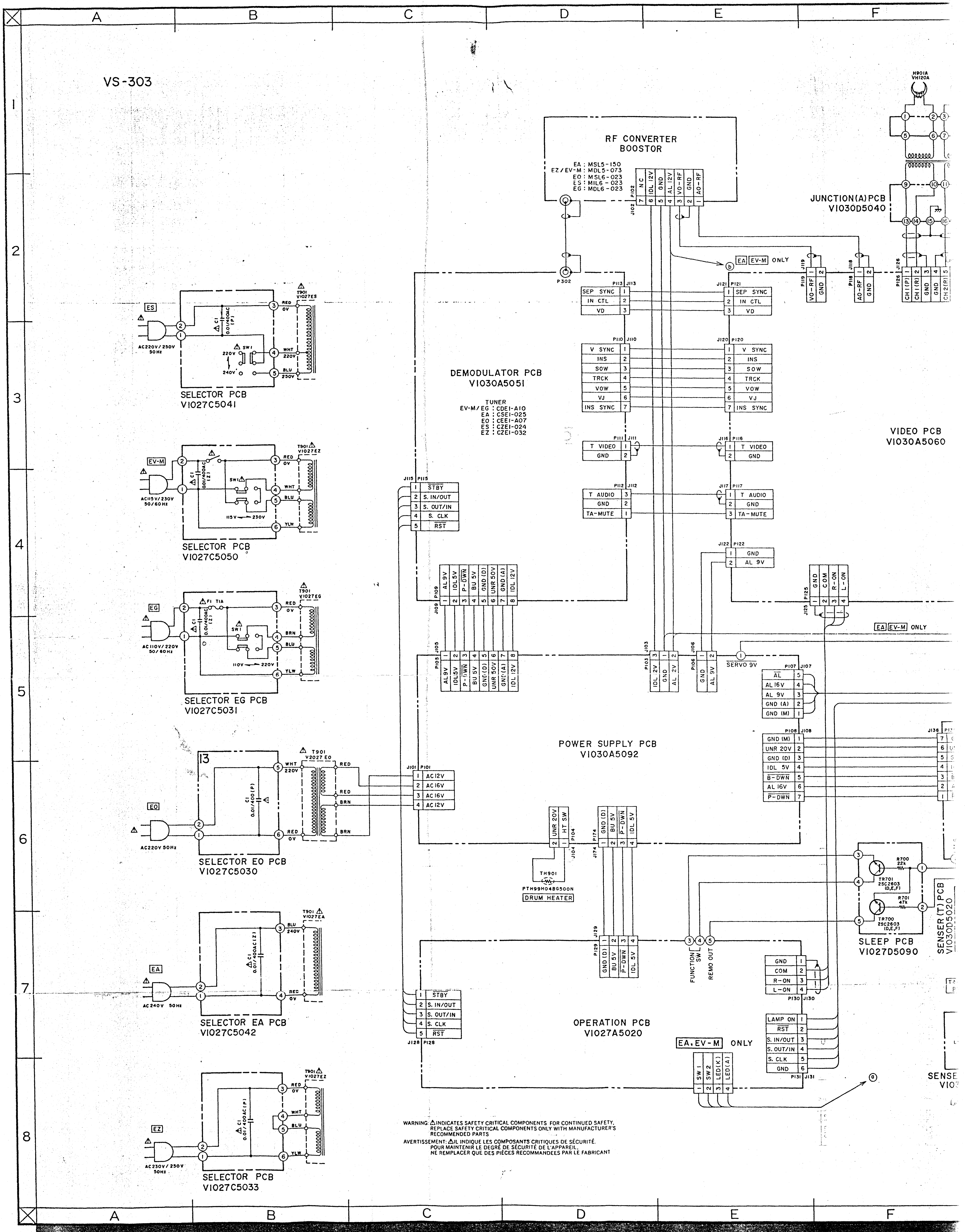

VS-201
IC1 LA7034
IC3 LA7035
IC4 AN6342N
IC5 HD14053
IC6 LA7018
CHROMA TRAP
CHARACTOR ADD
CHARACTOR LEVEL
CLAMP
EF
NO VIDEO
VIDEO EXSIST
SYNC INS
SYNC FROM DEMODULATOR WHEN NO VIDEO SYNC → VO CONVERT TO DOWN 4.0MHz FROM D/A CONVERTER
EE AMP
EE LEVEL
INPUT CTL
DELAY EQ
WHITE CLIP
DARK CLIP
MAIN PRE EMPHER
DYNAMIC EMPHA
FM MOD
CARRIER SET
DEVIATION
1H DELAY LINE
D・O・C
AGC DET
AGC AMP
Y/C MIX
BUFF AMP
CH-1 PRE AMP
CH-2 PRE AMP
SW AMP
PEAKING AMP
PB EQ
REC Y CURRENT
1.2M HPF
PHASE EQ
REC AMP
REC CHROMA
PB CHROMA
SECAM-H
0 to 1V: +90° ROTATION
2.5 to 5V: -90° ROTATION
10 to 15mA: ROTATION STOP
ACC DET
REC MAIN CONV BURST EMPH KILLER
ACC AMP
1/2 H KILLER
4 PHASE LOGIC
160FH VCO
PB MAIN CONV
KILLER DET
PB KILLER
COLOR DET
BGD GENERATOR
PB DECODER
REC PB 160 FH
4.43MHz VCO
SUB CONV
PB APD
REC APD
4.433619MHz
4.43M BPF
1.2M LPF
V SYNC TRAP
5.06M BPF
REC CHROMA CURRENT
ORIGINAL CHROMA (4.43MHz)
LOW FREQUENCY CONVERTED CHROMA (626.9kHz)
OSC
COUNT DOWN
4.43557MHz (fs + 1/8 fH)
50Hz
P121 TO DEM P110: SYNC SEP, INPUT CTL, VD
P116 TO DEM P111: Y-VIDEO, GND
VIDEO IN
VIDEO OUT
AUDIO IN
AUDIO OUT
P120 TO DEM P110: V SYNC, INS, SOW, TRACKING, VOW, VJ, INS SYNC
TEST: SWP, SWEEP(SP), GND
P126 TO SP HEAD: CH1 (P), CH1 (R), GND, GND, CH2 (R), CH2 (P)
TP1
TP2
TP4
TP5
TP9
TP10
TP12
TP15
EE
PB
REC
A
B
C
D
E
F
1
2
3
4
5
6
7
8


F
G
H
I
J
K
1
2
3
4
5
6
7
8
H901A VH120A
H901B VH120B
TION(A)PCB
V1030D5040
P118 J118
AO-RF
GND
P126 J126
CH1(P)
CH1(R)
GND
GND
CH2(R)
CH2(P)
FULL ERASE PCB
V1030D5170
H904 HV113201
P123 J123
FE
GND
A/C HEAD PCB
V1030D5180
P803 J803
TP1
TP2
H903
AUDIO HEAD
H902
ERASE HEAD
CTL HEAD
R1 10
P124 J124
AH(P)
GND
AH(R)
GND
AE
VIDEO PCB
V1030A5060
P801 J801
GND
SWEEP(SP)
SWP
P127 J127
J142 P142
GND
TRCK
EE 9V
REC 9V
PB
REF V
A-MUTE
SWP
VP
L-ON
EA EV-M ONLY
J180 P180
GND
EVM
EA EVM ONLY
SERVO 9V
CUE
MOTOR PCB
M3220D5010
M901 DRUM MOTOR
DM CTL
AL 16V
GND
FG
PG
DM GND
P143 J143
CTL H
GND
P141 J141
CAPSTAN MOTOR
PCB DD-XV021
CM
Rf
Vcc
0.1V
9.5V
4.8V
4.7V
2.2V
4.5V
F/R
CAPST IN
LOGIC CONTROL
AMP CONTROL
ZM01 SA2002
Hw
Hv
Hu
7.7V
15.0V
0.7V
0.8V
0.5V
0V
FB
GND
RM04 6.8
RM03 6.8
RM02 6.8
CM01 33/16
CM02 33/16
CM03 33/16
CM08 0.047
CM07 0.047
CM06 0.047
RM06 330
RM05 330
CM04 33/16
RM07 820
CM05 100/6.3
RM08 33k
J148 P148
P146 J146
CM CTL
FG 1
FG 2
SRV 9V
GND
CM-PWR
M-RVS
GND(M)
P142 J179
AL 12V
EA EV M ONLY
P179 J179
SW 1
SW 2
LED(K)
LED(A)
SERVO PCB (PAL)
V1030A5070
J802 P802
D PG
REF V
D SPD
SWP
REF V
CTL
C SPD
C FG
GND
TEST TERMINAL
J147 P147
GND(M)
GND
AL 9V
AL 16V
AL
J145 P145
GND
S.CLK
S.O/I
S.I/O
RST
LAMP ON
J144 P144
P137 J137
L.CTL
IDL 5V
R.S.SW
LM STP
D3
D2
D1
D0
PRG
LD1
GND
J136 P136
GND
UNR 20V
GND (D)
IDL 5V
B-DWN
AL 16V
P-DWN
MECHA DRIVE PCB
V1030A5080
SLEEP PCB
V1027D5090
R700 22k
R701 47k
TR701 2SC2603 (D,E,F)
TR700 2SC2603 (D,E,F)
LM 6
POS-4
J140 P140
TB(-)
TB(+)
S.LAMP-
S.LAMP+
TRP(DA)
TRP(DC)
TRP(C)
D GND
CSW-C
SENSER (T) PCB
V1030D5020
PH1 ON2160
SL902
TAKE UP REEL BRAKE COIL
SENSER LED PCB
V1030D5350
D1 LN59
CASSET SW PCB
V1030D5320
SW1
P133 J133
J135 P135
POS-4
POS-1
GND(D)
POS-3
POS-2
ENCODER
J134 P134
R.LAMP-
R.LAMP+
STRT-S
END-S
CSW-B
CSW-A
GND(D)
SENSER (L) PCB
V1030D5140
END SENSER
TR1 PN202S
IN901 (L)
IN902 (R)
R LAMP
START SENSER
SENSER (R) PCB
V1030D5150
SW PCB
(EJECTOR)
V1030D5190
SENSER (S) PCB
V1030D5150
T102
T101
GND(D)
R.S.SW
LM(+)
LM(-)
SB(+)
SB(-)
J138 P138
J139 P139
RM(+)
RM(-)
SRP(DA)
SRP(DC)
SRP(C)
REC SAFETY
M903 MXN-13AD12
LOADING MOTOR
SL901
SUPPLY REEL BRAKE COIL
M904 JME28-K
REEL MOTOR
a
b

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/6W(J)
ALL CAPACITORS IN μF 50WV(J)
POWER TRANSFORMER IS DIFFERENT
ACCORDING TO AREA

VS-303 EO/ES/EZ EA/EG/EV-M
CONNECTION DIAGRAM
NO.15-1 841203A₂

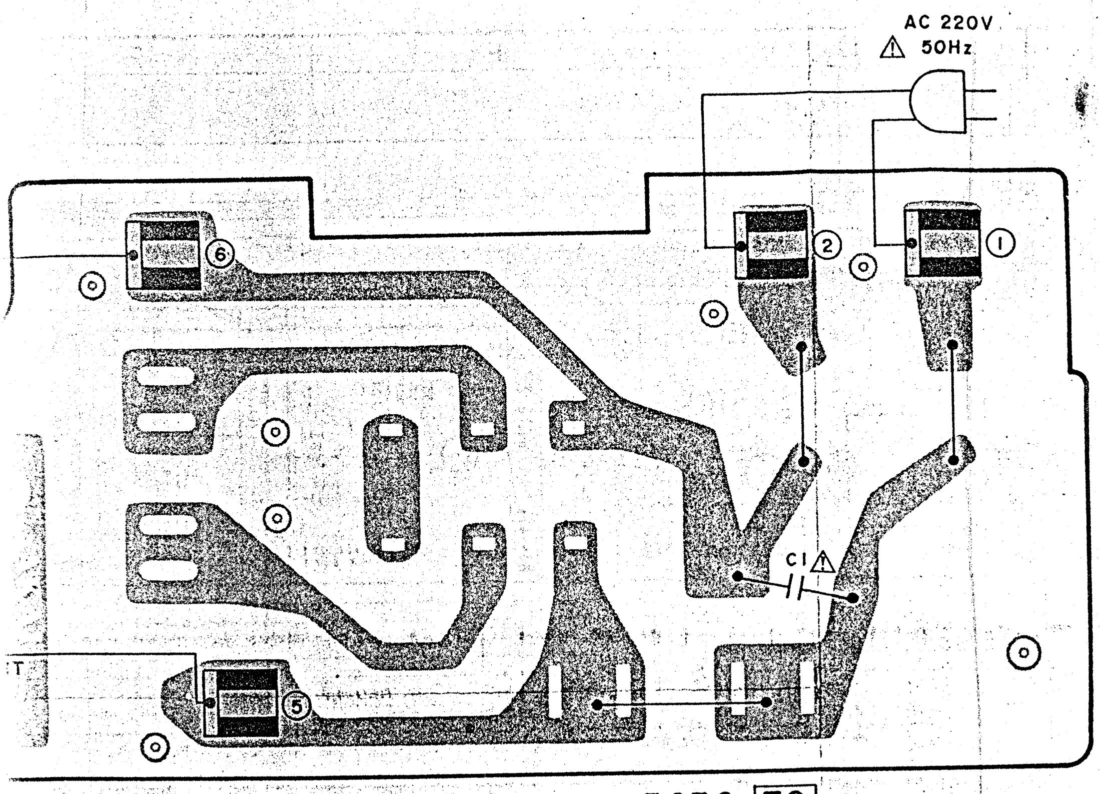
VS-303



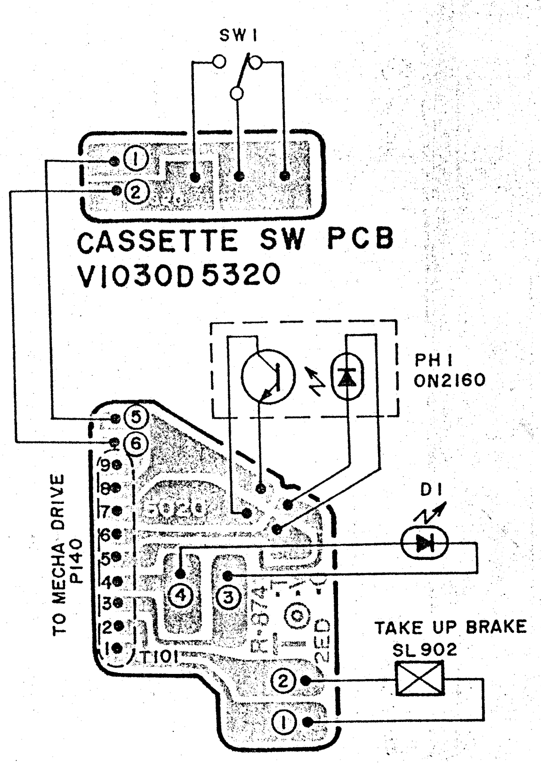
A
B
C
D
E
F
1
2
3
4
5
6
7
8
RF CONVERTER BOOSTOR
EA : MSL5-150
EZ / EV-M : MDL5-073
EO : MSL6-023
ES : MIL6-023
EG : MDL6-023
P102 J102
NC
IDL 12V
GND
AL 12V
VO-RF
GND
AO-RF
P302
JUNCTION(A)PCB
V1030D5040
H901A
VH120A
EA EV-M ONLY
P119 J119 VO-RF GND
P118 J118 AO-RF GND
P126 J126 CH1(P) CH1(R) GND GND CH2(R)
DEMODULATOR PCB
V1030A5051
TUNER
EV-M/EG : CDE1-A10
EA : CSE1-025
EO : CEE1-A07
ES : CZE1-024
EZ : CZE1-032
P113 J113 SEP SYNC IN CTL VD
J121 P121 SEP SYNC IN CTL VD
P110 J110 V SYNC INS SOW TRCK VOW VJ INS SYNC
J120 P120 V SYNC INS SOW TRCK VOW VJ INS SYNC
P111 J111 T VIDEO GND
J116 P116 T VIDEO GND
P112 J112 T AUDIO GND TA-MUTE
J117 P117 T AUDIO GND TA-MUTE
J122 P122 GND AL 9V
VIDEO PCB
V1030A5060
J115 P115 STBY S. IN/OUT S. OUT/IN S. CLK RST
J109 P109 AL 9V IDL 5V P-DWN BU 5V GND (D) UNR 50V GND (A) IDL 12V
P105 J105 AL 9V IDL 5V P-DWN BU 5V GND (D) UNR 50V GND (A) IDL 12V
P103 J103 IDL 2V GND AL 2V
P106 J106 GND AL 9V
SERVO 9V
P125 J125 GND COM R-ON L-ON
EA EV-M ONLY
P107 J107 AL AL 16V AL 9V GND (A) GND (M)
P108 J108 GND (M) UNR 20V GND (D) IDL 5V B-DWN AL 16V P-DWN
J136
POWER SUPPLY PCB
V1030A5092
J101 P101 AC 12V AC 16V AC 16V AC 12V
P104 J104 UNR 20V HT SW
TH901
PTH99H04BG500N
DRUM HEATER
J174 P174 GND (D) BU 5V P-DWN IDL 5V
J129 P129 GND (D) BU 5V P-DWN IDL 5V
FUNCTION SW
REMO OUT
R700 22k
R701 47k
TR701 2SC2603 (D,E,F)
TR700 2SC2603 (D,E,F)
SLEEP PCB
V1027D5090
SENSER(T) PCB
V1030D5020
SENSE
V10
P130 J130 GND COM R-ON L-ON
P131 J131 LAMP ON RST S. IN/OUT S. OUT/IN S. CLK GND
OPERATION PCB
V1027A5020
EA, EV-M ONLY
SW1 SW2 LED(K) LED(A)
J128 P128 STBY S. IN/OUT S. OUT/IN S. CLK RST
ES
AC220V/250V 50Hz
C1 0.01/400AC (P)
SW1
220V
240V
RED 0V
WHT 220V
BLU 250V
T901 V1027ES
SELECTOR PCB
V1027C5041
EV-M
AC115V/230V 50/60Hz
C1 0.01/400AC (Z)
SW1
115V — 230V
RED 0V
WHT
BLU
YLW
T901 V1027EZ
SELECTOR PCB
V1027C5050
EG
AC110V/220V 50/60Hz
F1 T1A
C1 0.01/400AC (Z)
SW1
110V — 220V
RED 0V
BRN
BLU
YLW
T901 V1027EG
SELECTOR EG PCB
V1027C5031
EO
AC220V 50Hz
C1 0.01/400 (P)
WHT 220V
RED 0V
T901 V2027 EO
RED
RED
BRN
BRN
SELECTOR EO PCB
V1027C5030
EA
AC 240V 50Hz
C1 0.01/400AC (Z)
BLU 240V
RED 0V
T901 V1027EA
SELECTOR EA PCB
V1027C5042
EZ
AC230V/250V 50Hz
C1 0.01/400AC (P)
RED 0V
WHT
BLU
YLW
T901 V1027EZ
SELECTOR PCB
V1027C5033
13

WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

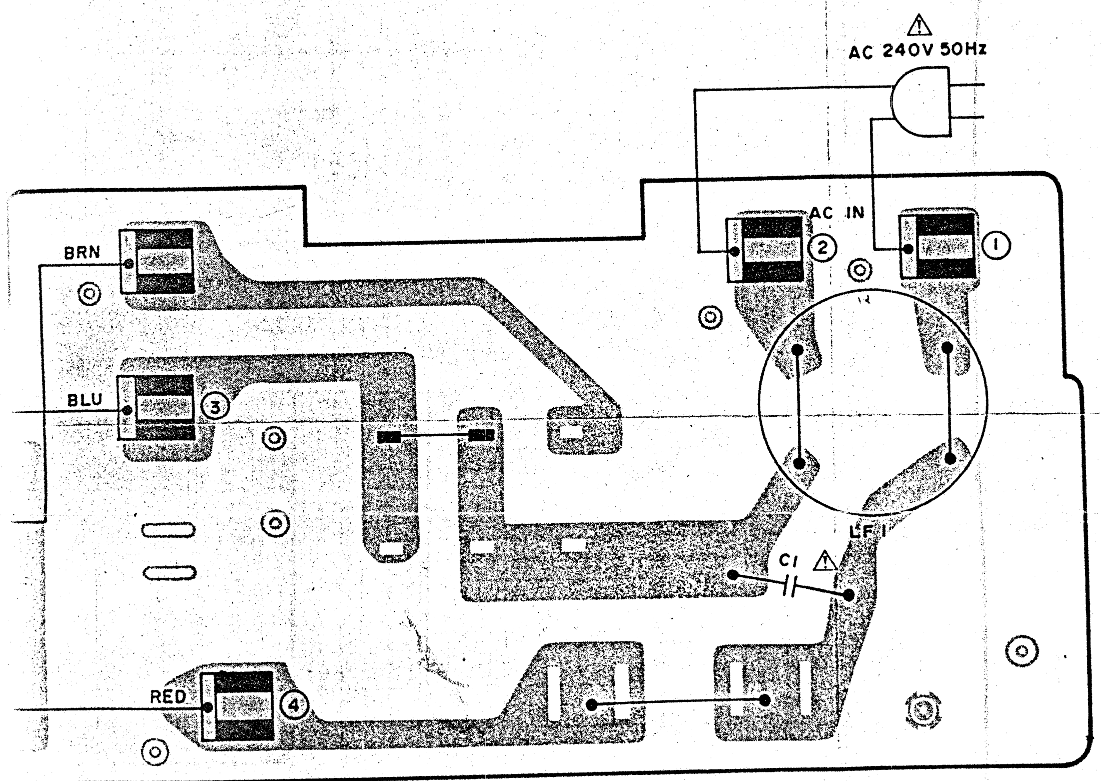
AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT


AC 220V
⚠ 50Hz
①
②
⑥
⑤
C1 ⚠
T

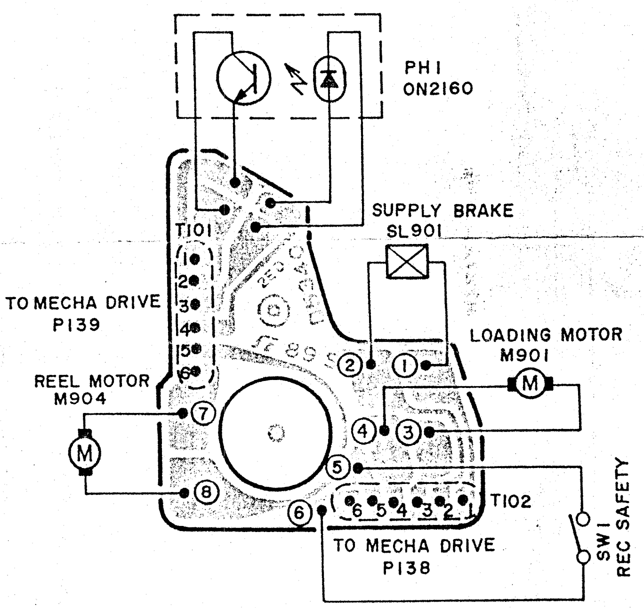
SELECTOR PCB VI027C5030 EO


SW1
①
②
CASSETTE SW PCB
VI030D5320
PH1
ON2160
⑤
⑥
TO MECHA DRIVE
P140
9 8 7 6 5 4 3 2 1
D1
④
③
R-874
2ED
T101
TAKE UP BRAKE
SL902
②
①

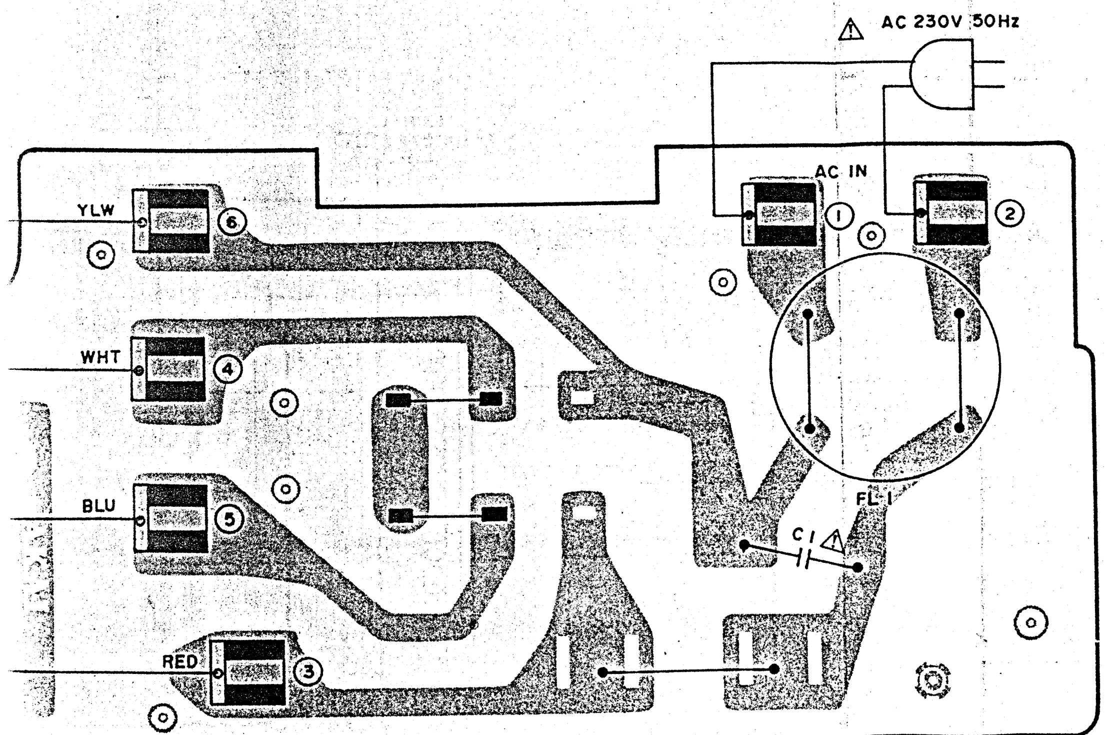
SENSOR (T) PCB
VI030D5020 (2ED)


⚠
AC 240V 50Hz
AC IN
②
①
BRN
BLU
③
C1 ⚠
LF1
RED
④

LECTOR PCB VI027C5042 EA


PH1
ON2160
SUPPLY BRAKE
SL901
T101
TO MECHA DRIVE
P139
1 2 3 4 5 6
LOADING MOTOR
M901
REEL MOTOR
M904
②
①
⑦
④
③
⑤
⑧
⑥
6 5 4 3 2 1
T102
TO MECHA DRIVE
P138
SW1
REC SAFETY

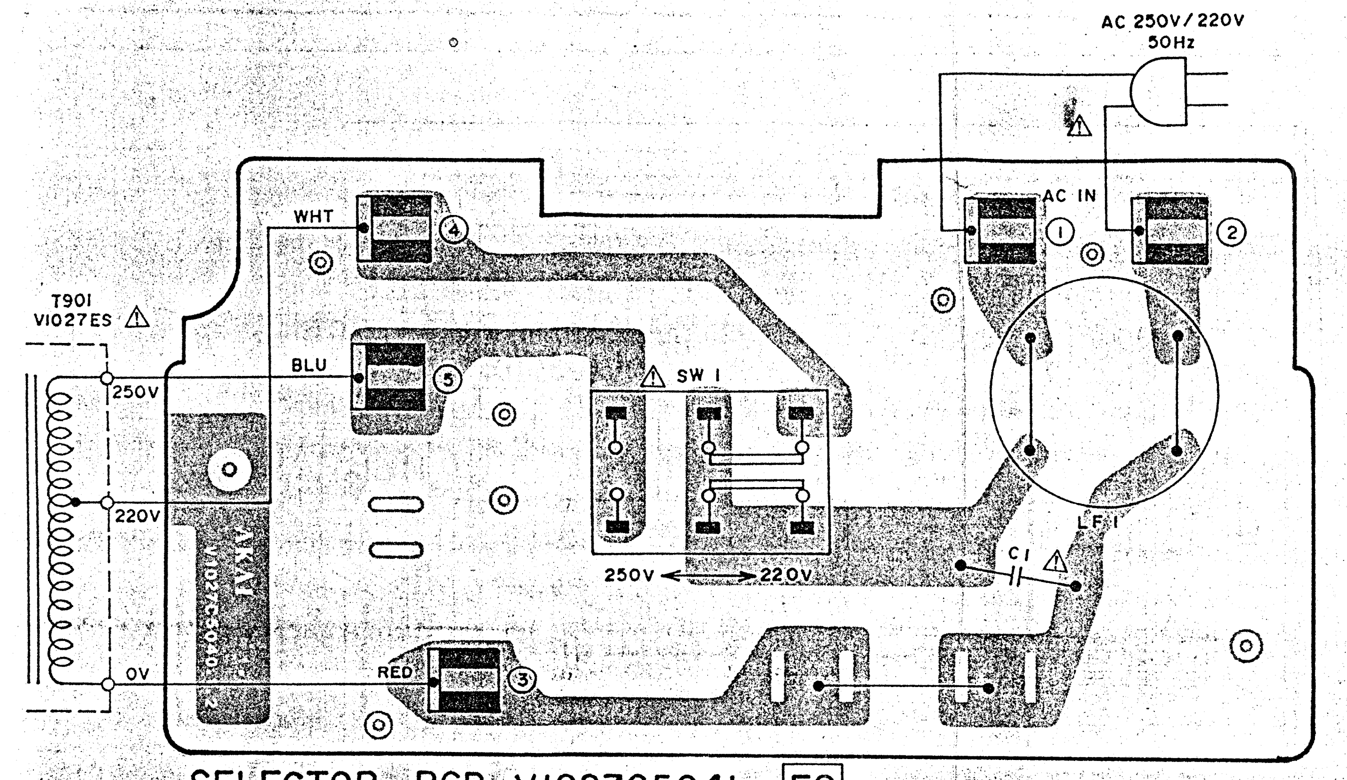
SENSOR (S) PCB
VI030D5340 (2ED)


⚠ AC 230V 50Hz
AC IN
①
②
YLW
⑥
WHT
④
BLU
⑤
C1 ⚠
FL1
RED
③

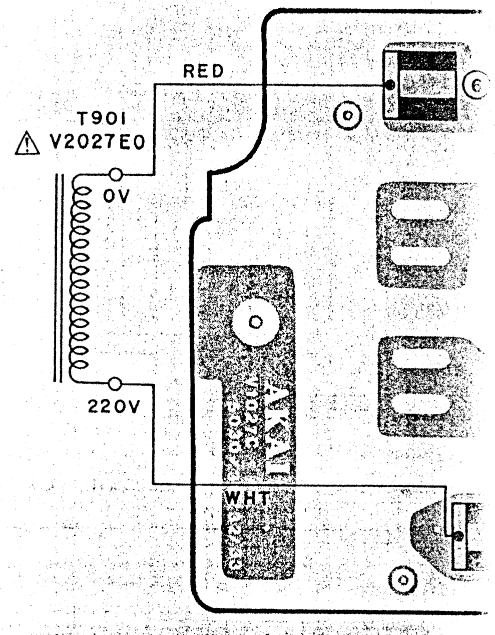
LECTOR PCB VI027C5033 EZ

WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY,
REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S
RECOMMENDED PARTS

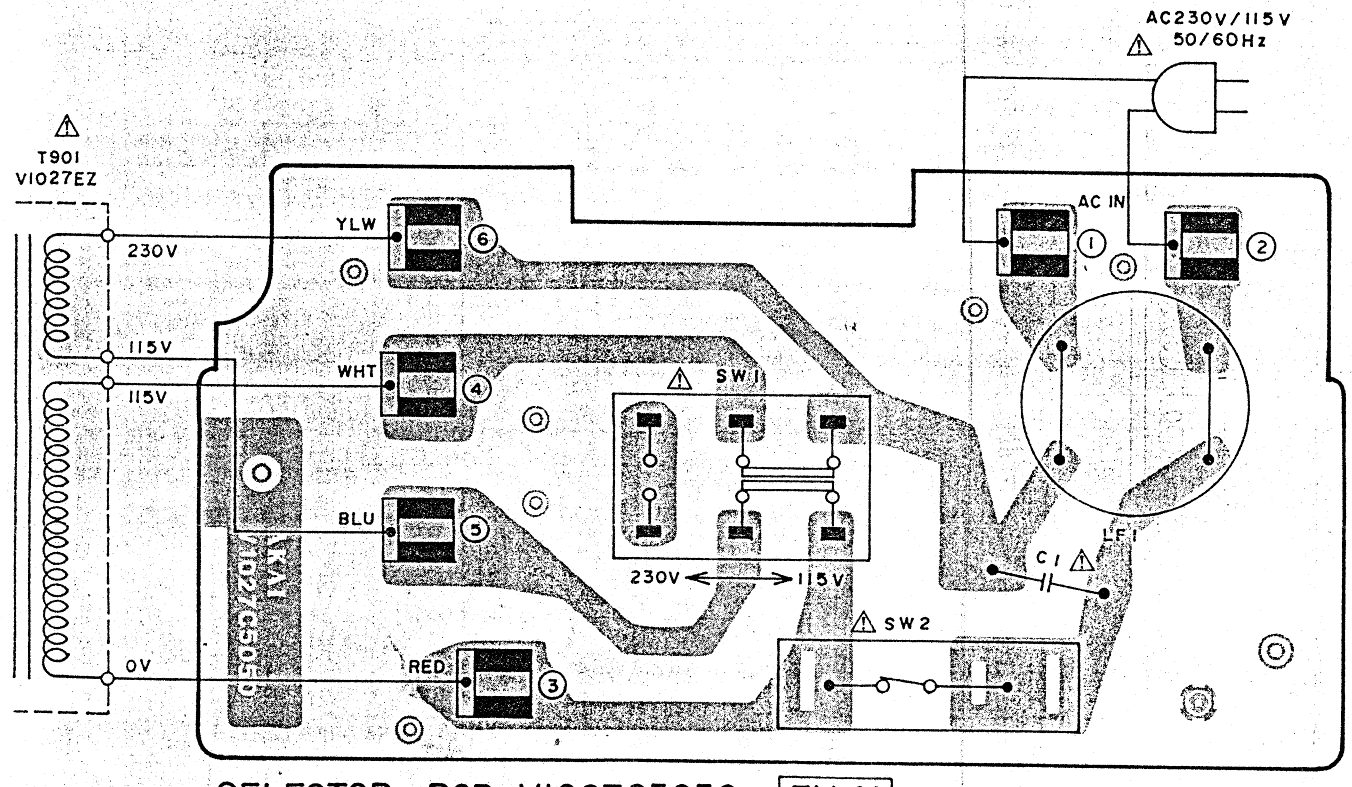
AVERTISSEMENT: ⚠IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ.
POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL,
NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT


AC 250V/220V
50Hz
T901
V1027ES
WHT
BLU
RED
250V
220V
0V
AC IN
SW 1
250V
220V
C1
LF1
AKAI
V1027C5040

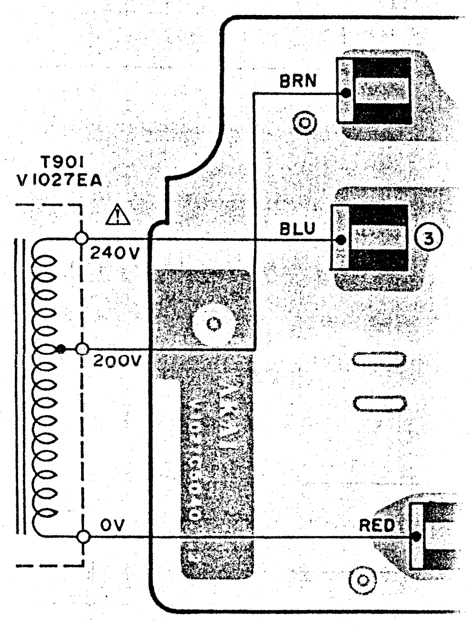
SELECTOR PCB V1027C5041 ES


T901
V2027E0
RED
0V
220V
WHT

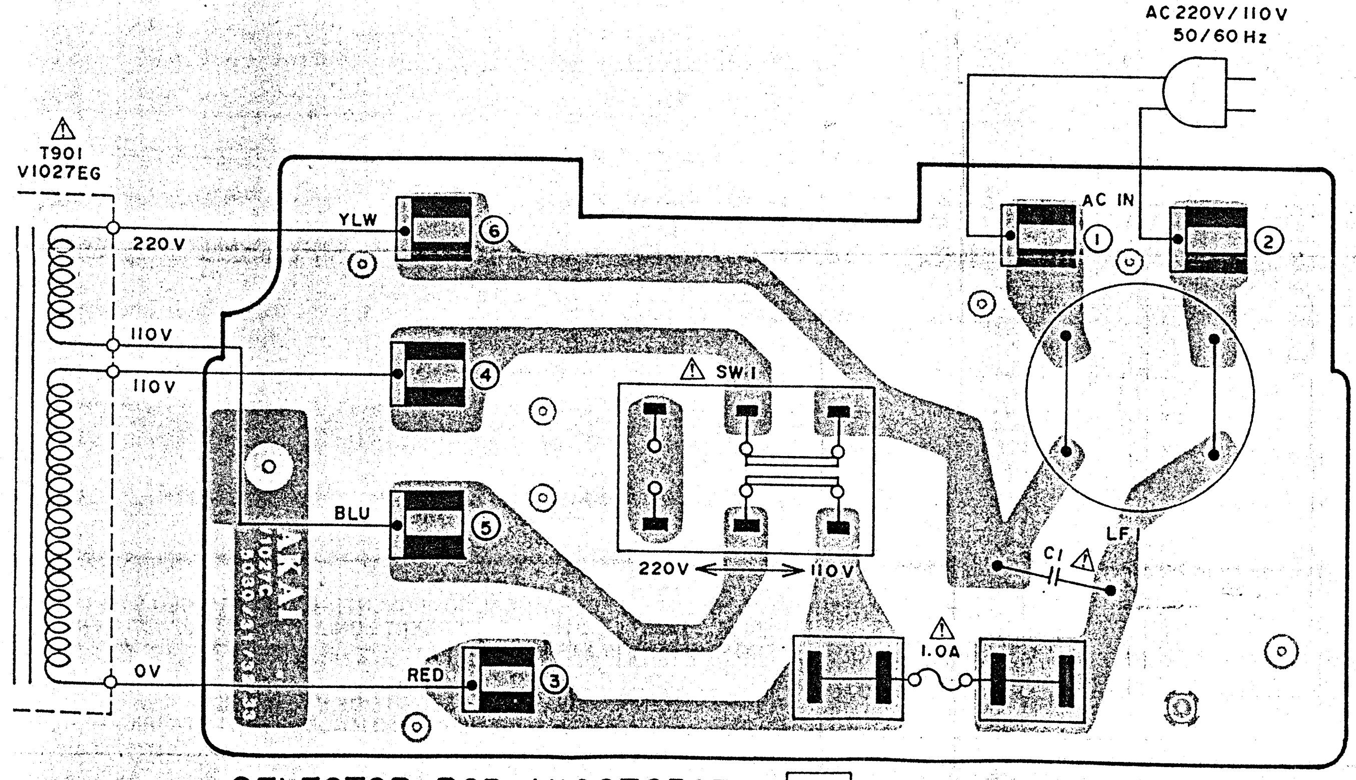
SEL


AC230V/115V
50/60Hz
T901
V1027EZ
230V
115V
115V
0V
YLW
WHT
BLU
RED
AC IN
SW1
SW2
230V
115V
C1
LF1
AKAI
V1027C5050

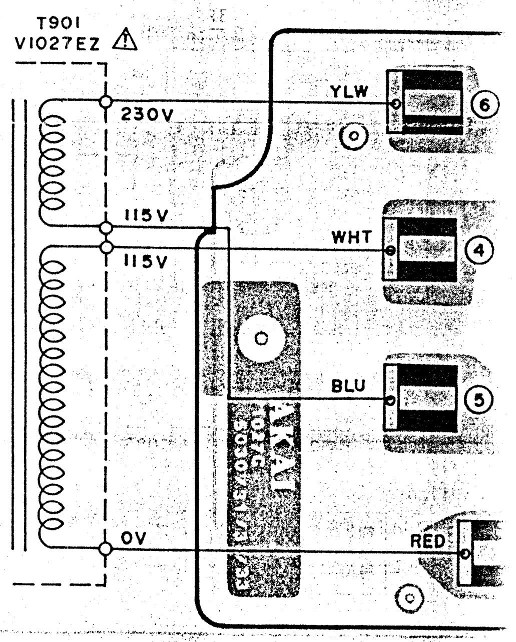
SELECTOR PCB V1027C5050 EV-M


T901
V1027EA
240V
200V
0V
BRN
BLU
RED

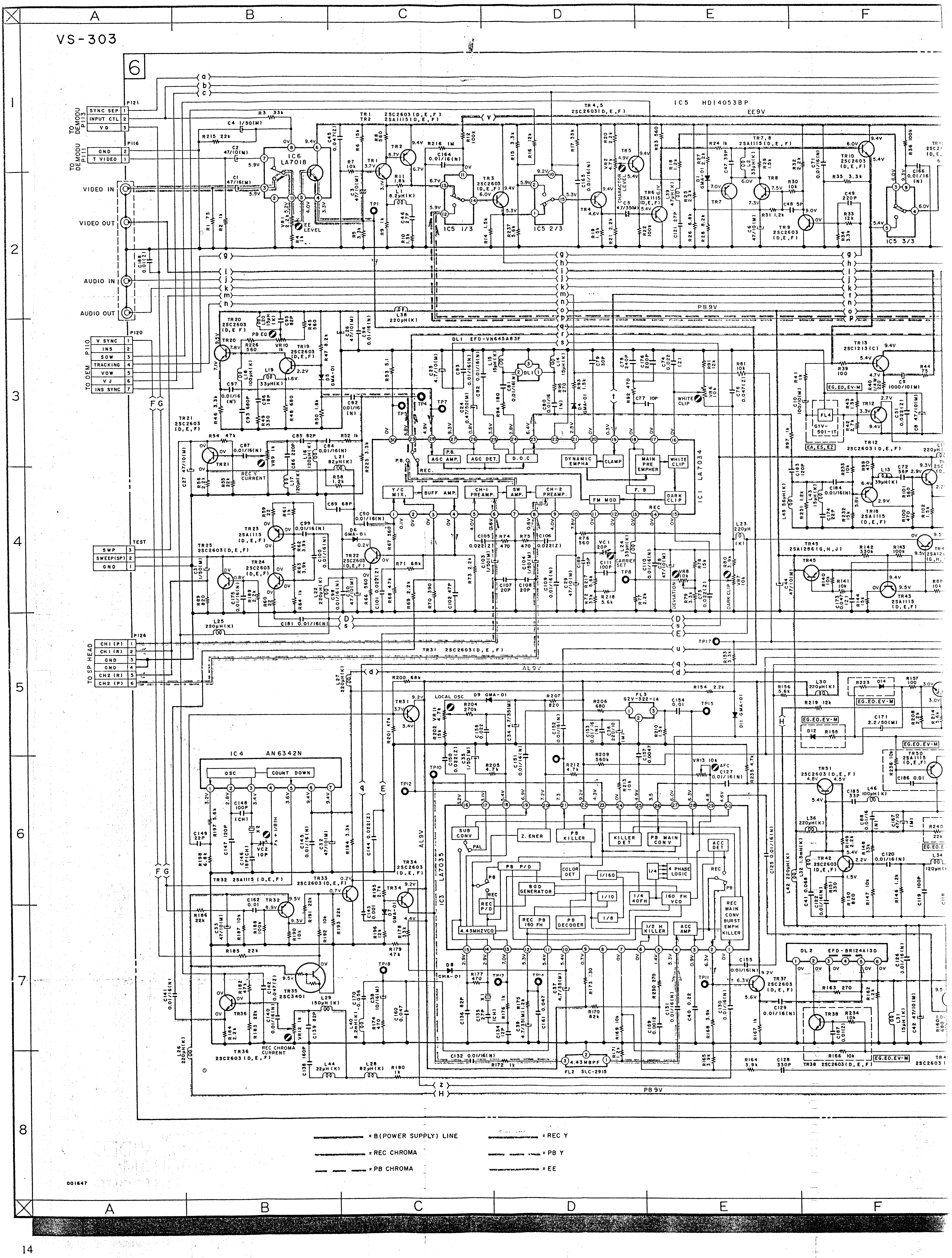
SELECTOR PCB

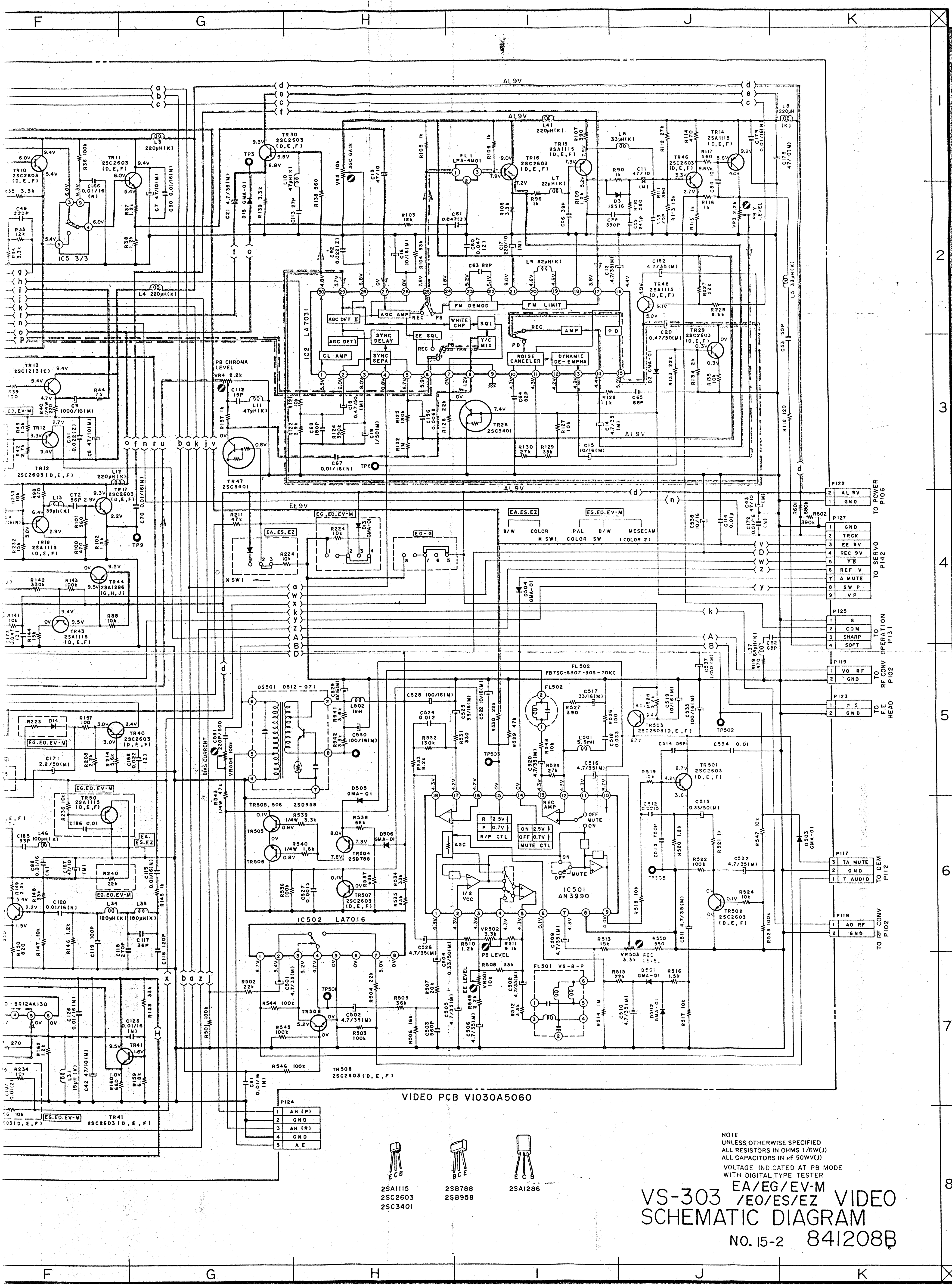

AC 220V/110V
50/60Hz
T901
V1027EG
220V
110V
110V
0V
YLW
BLU
RED
AC IN
SW1
220V
110V
C1
LF1
1.0A
AKAI

SELECTOR PCB V1027C5031 EG


T901
V1027EZ
230V
115V
115V
0V
YLW
WHT
BLU
RED
AKAI

SELECTOR PCB

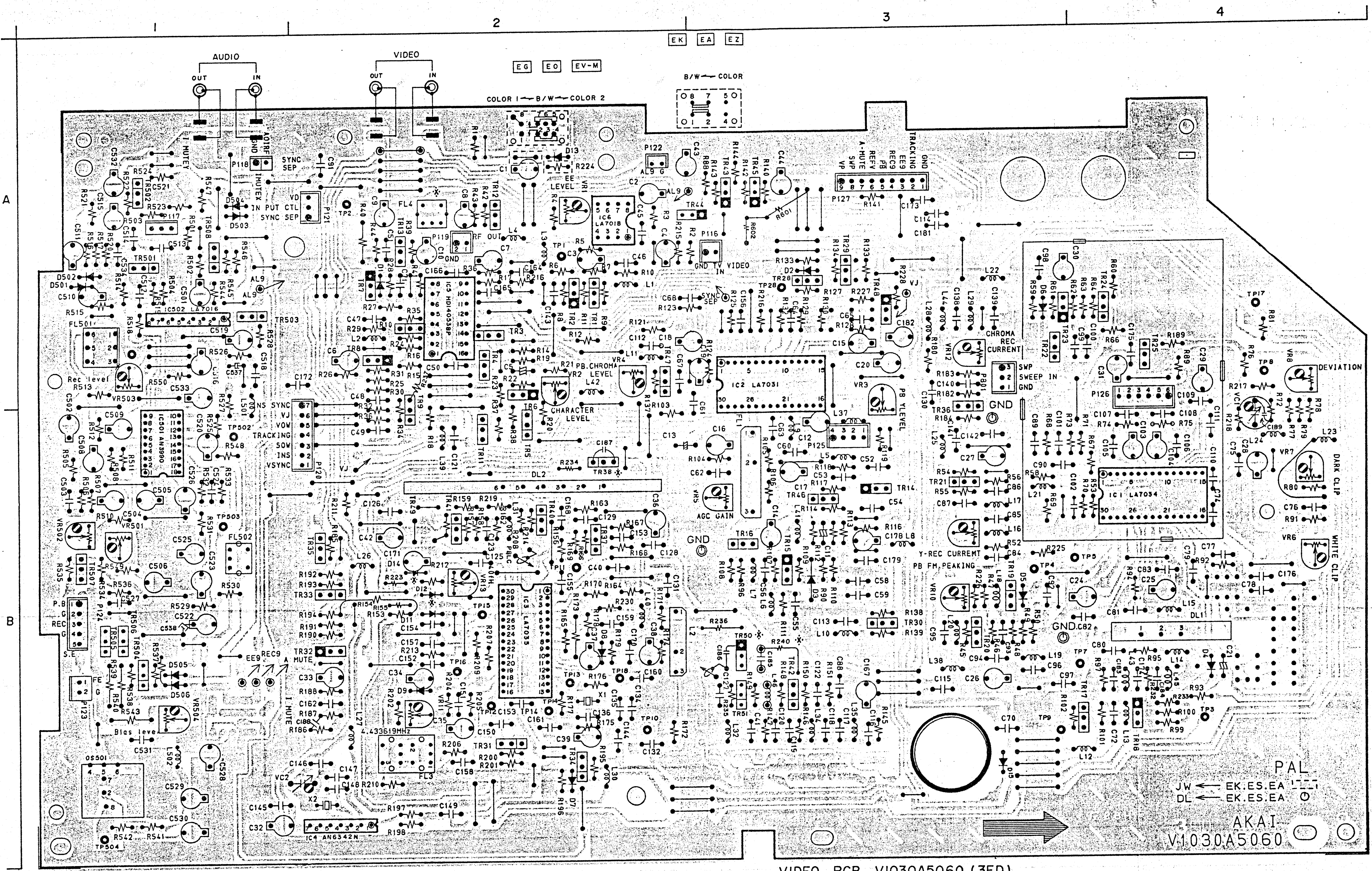

VS-303
6
TO DEMODU P113
SYNC SEP
INPUT CTL
V D
TO DEMODU P111
GND
T VIDEO
VIDEO IN
VIDEO OUT
AUDIO IN
AUDIO OUT
TO DEM P110
V SYNC
INS
SOW
TRACKING
VOW
V J
INS SYNC
SWP
SWEEP(SP)
GND
TEST
TO SP HEAD
CH1 (P)
CH1 (R)
GND
GND
CH2 (R)
CH2 (P)
IC6 LA7018
IC5 HD14053BP
IC5 1/3
IC5 2/3
IC5 3/3
EE LEVEL
CHARACTOR LEVEL
DL1 EFD-VN645A83F
IC1 LA7034
Y/C MIX.
BUFF AMP.
CH-1 PREAMP.
SW AMP.
CH-2 PREAMP.
P.B. AGC AMP.
AGC DET.
D.O.C
DYNAMIC EMPHA
CLAMP
MAIN PRE EMPHER
WHITE CLIP
FM MOD
F. B
DARK CLIP
REC Y CURRENT
DEVIATION
CARRIER SET
DARK CLIP
WHITE CLIP
IC4 AN6342N
OSC
COUNT DOWN
Fs + 1/8fH
IC3 LA7035
SUB CONV
PAL
Z. ENER
PB KILLER
KILLER DET
PB MAIN CONV
ACC DET
PB P/D
COLOR DET
1/160
1/4
4 PHASE LOGIC
REC P/D
BGD GENERATOR
1/10
1/4 40FH
160 FH VCO
REC PB 160 FH
PB DECODER
1/8
4.43MHZVCO
1/2 H KILLER
ACC AMP
REC MAIN CONV BURST EMPH KILLER
LOCAL OSC
AFC
REC CHROMA CURRENT
FL2 SLC-2915
4.43MBPF
FL3 GZV-322-1A
DL2 EFD-BR124A13D
FL4 GYV-501-1T
EE9V
PB9V
AL9V
= B(POWER SUPPLY) LINE
= REC CHROMA
= PB CHROMA
= REC Y
= PB Y
= EE
001647


F
G
H
I
J
K
1
2
3
4
5
6
7
8
AL9V
EE9V
IC2 LA7031
AGC DET II
AGC DET I
CL AMP
AGC AMP
SYNC DELAY
SYNC SEPA
EE SQL
FM DEMOD
WHITE CHP
SQL
Y/C MIX
FM LIMIT
AMP
P D
NOISE CANCELER
DYNAMIC DE-EMPHA
REC
PB
IC501 AN3990
AGC
R/P CTL
MUTE CTL
REC AMP
OFF MUTE ON
1/2 VCC
IC502 LA7016
IC5 3/3
FL1 LP3-4M01
FL501 VS-8-P
FL502 FB7SG-5307-305-70KC
Q5501 0512-071
PB CHROMA LEVEL
VR4 2.2k
AGC GAIN
VR5 10k
PB Y LEVEL
VR3 2.2k
BIAS CURRENT
VR504 100k
PB LEVEL
VR502 3.3k
EE LEVEL
VR501 10k
REC LEVEL
VR503 3.3k
*SW1
EA.ES.EZ
EG.E0.EV-M
EG-G
B/W
COLOR
PAL
COLOR SW
MESECAM
(COLOR 2)
TP3
TP6
TP9
TP501
TP502
TP503
TP505
TR10 2SC2603 (D,E,F)
TR11 2SC2603 (D,E,F)
TR12 2SC2603 (D,E,F)
TR13 2SC1213 (C)
TR14 2SA1115 (D,E,F)
TR15 2SA1115 (D,E,F)
TR16 2SC2603 (D,E,F)
TR17 2SC2603 (D,E,F)
TR18 2SA1115 (D,E,F)
TR28 2SC3401
TR29 2SC2603 (D,E,F)
TR30 2SC2603 (D,E,F)
TR40 2SC2603 (D,E,F)
TR41 2SC2603 (D,E,F)
TR43 2SA1115 (D,E,F)
TR44 2SA1286 (G,H,J)
TR46 2SC2603 (D,E,F)
TR47 2SC3401
TR48 2SA1115 (D,E,F)
TR50 2SA1115 (D,E,F)
TR501 2SC2603 (D,E,F)
TR502 2SC2603 (D,E,F)
TR503 2SC2603 (D,E,F)
TR504 2SB788
TR505, 506 2SD958
TR507 2SC2603 (D,E,F)
TR508 2SC2603 (D,E,F)
P122
AL 9V
GND
TO POWER P106
P127
GND
TRCK
EE 9V
REC 9V
PB
REF V
A MUTE
SW P
VP
TO SERVO P142
P125
S
COM
SHARP
SOFT
TO OPERATION P131
P119
VO RF
GND
TO RF CONV P102
P123
F E
GND
TO F.E HEAD
P117
TA MUTE
GND
T AUDIO
TO DEM P112
P118
AO RF
GND
TO RF CONV P102
P124
AH (P)
GND
AH (R)
GND
A E
VIDEO PCB V1030A5060
ECB
BCE
ECB
2SA1115
2SC2603
2SC3401
2SB788
2SB958
2SA1286

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/6W(J)
ALL CAPACITORS IN μF 50WV(J)
VOLTAGE INDICATED AT PB MODE
WITH DIGITAL TYPE TESTER

VS-303 EA/EG/EV-M /E0/ES/EZ VIDEO SCHEMATIC DIAGRAM

NO. 15-2 84I208B


1
2
3
4
A
B
EK
EA
EZ
AUDIO
VIDEO
OUT
IN
EG
EO
EV-M
B/W ← COLOR
COLOR 1 ← B/W → COLOR 2
CHARACTER LEVEL
PB Y LEVEL
AGC GAIN
DEVIATION
DARK CLIP
WHITE CLIP
Y-REC CURRENT
PB FM PEAKING
CHROMA REC CURRENT
SWEEP IN
GND
PAL
JW ← EK.ES.EA
DL ← EK.ES.EA
AKAI
V1030A5060

VIDEO PCB V1030A5060 (3ED)

LOCATION OF COMPONENTS

TRS

TR1 to 13	A2
TR14, 15, 16	B3
TR17, 18	B4
TR19, 20, 21	B3
TR22, 23	A3
TR24, 25	A4
TR28, 29	A3
TR30	B3
TR31 to 35	B2
TR36	A3
TR37, 38	B2
TR40, 41	B2
TR42	B3
TR43 to 45	A3
TR46	B3
TR47	A2
TR48	A3
TR50, 51	B3
TR501 to 503	A1
TR504 to 507	B1
TR508	A1

ICs

IC1	B4
IC2	A3
IC3	B2
IC4	B2
IC5	A2
IC6	A2
IC501	A1
IC502	A1

TERMINALS

P116	A3
P117	A1
P118	A1
P119	A2
P120	A2
P121	A2
P122	A2
P123	B1
P124	B1
P125	A3
P126	A4
P127	A3

☆ MARKED PARTS ARE EG EO EV-M MODEL ONLY

TR1, 3 to 5, 9 to 12, 16, 17, 19 to 22, 24, 25, 29 to 31, 33, 34, 36, 37, 40 to 42, 46, 501 to 503, 507, 508 ---------------------------- 2SC2603

TR2, 6 to 8, 14, 15, 18, 23, 32, 43, 48,50 ------------------ 2SA1115

TR13 ------------------2SC1213

TR28, 35, 47 ------------ 2SC3401

TR44, 45 ---------------2SA1286

TR504 ---------------2SB788

TR505, 506 ------------2SD958

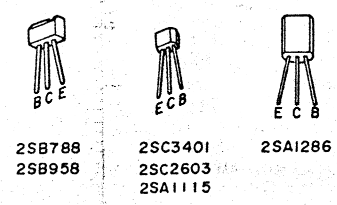
(VIDEO PART)

VR1.....EE level
VR2.....Charactor level
VR3.....PB Y level
VR4.....PB Chroma level
VR5.....AGC
VR6.....White Clip
VR7.....Dark Clip
VR8.....Deviation
VR9.....REC Y current
VR10....PB EQ
VR11....Local OSC
VR12....REC Chroma current
VR13....AFC

VC1....Carrier set
VC2....fs + 1/8fH

(AUDIO PART)

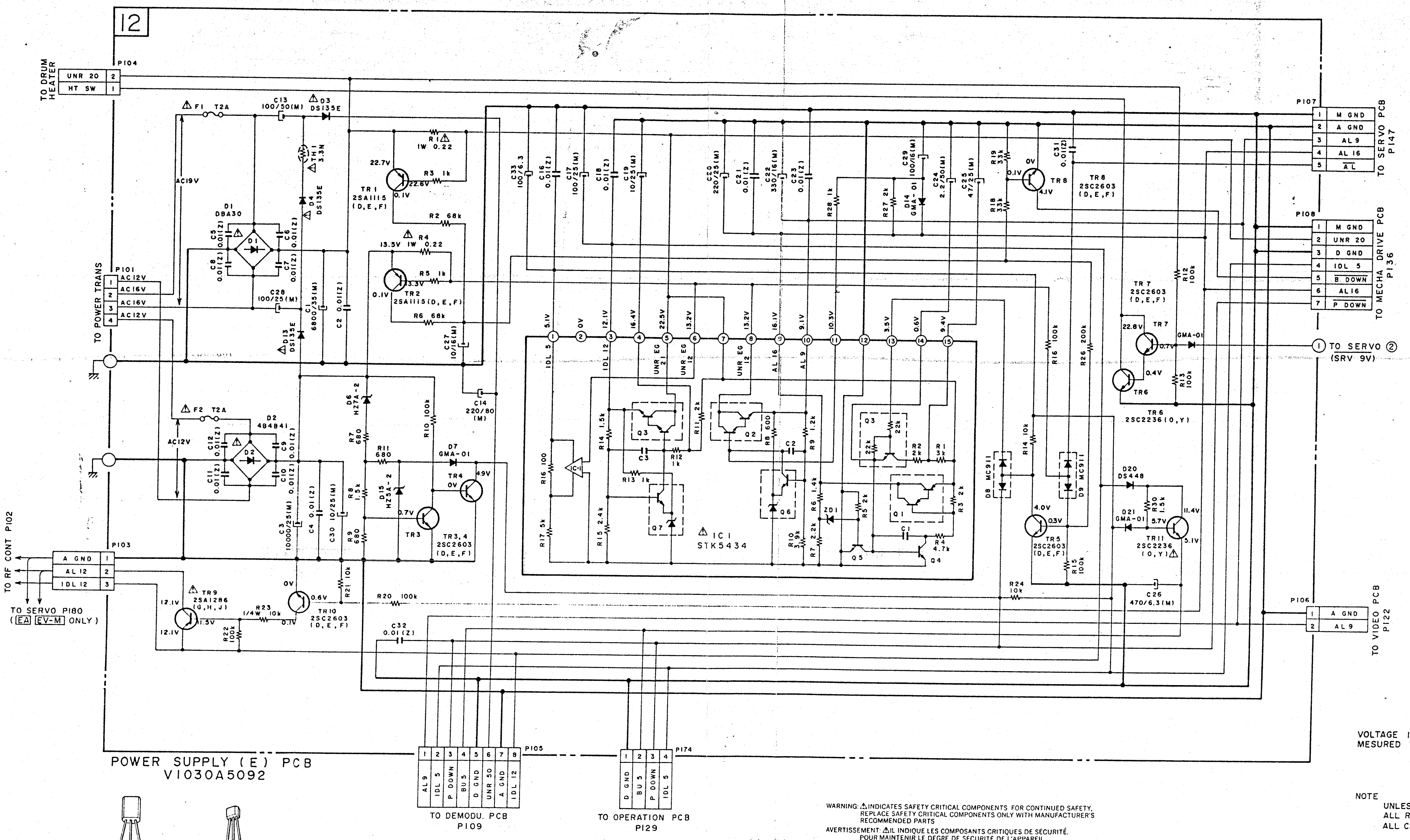
VR501...EE level
VR502...PB level
VR503...REC level
VR504...Bias current

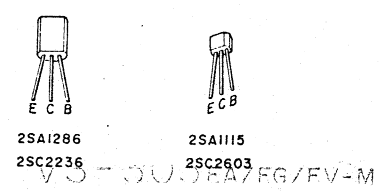

BCE
2SB788
2SB958
ECB
2SC3401
2SC2603
2SA1115
E C B
2SA1286

B
○ • • = NPN TRANSISTORS

B
● • • = FNP TRANSISTORS

VS-303


12
TO DRUM HEATER
P104
UNR 20
HT SW
TO POWER TRANS
P101
AC12V
AC16V
AC16V
AC12V
F1 T2A
F2 T2A
AC19V
AC12V
C13 100/50(M)
D3 DS135E
TH1 3.3N
D4 DS135E
D1 DBA30
D2 4B4B41
C5 0.01(Z)
C6 0.01(Z)
C7 0.01(Z)
C8 0.01(Z)
C28 100/25(M)
C1 6800/35(M)
C2 0.01(Z)
D13 DS135E
C9 0.01(Z)
C10 0.01(Z)
C11 0.01(Z)
C12 0.01(Z)
C3 10000/25(M)
C4 0.01(Z)
C30 10/25(M)
R1 1W 0.22
R2 68k
R3 1k
R4 1W 0.22
R5 1k
R6 68k
TR1 2SA1115 (D,E,F)
TR2 2SA1115(D,E,F)
22.7V
22.6V
0.1V
13.5V
13.3V
C27 10/16(M)
C14 220/80 (M)
D6 HZ7A-2
D15 HZ5A-2
R7 680
R8 1.5k
R9 680
R10 100k
R11 680
D7 GMA-01
TR4
TR3
TR3,4 2SC2603 (D,E,F)
49V
0.7V
TO RF CONT P102
P103
A GND
AL 12
IDL 12
TO SERVO P180 (EA EV-M ONLY)
TR9 2SA1286 (G,H,J)
12.1V
1.5V
R22 100k
R23 1/4W 10k
TR10 2SC2603 (D,E,F)
0.6V
R21 10k
R20 100k
C32 0.01(Z)
C33 100/6.3
C16 0.01(Z)
C17 100/25(M)
C18 0.01(Z)
C19 10/25(M)
C20 220/25(M)
C21 0.01(Z)
C22 330/16(M)
C23 0.01(Z)
C29 100/16(M)
C24 2.2/50(M)
C25 47/25(M)
R19 33k
R18 33k
R28 1k
R27 2k
D14 GMA-01
C31 0.01(Z)
TR8 2SC2603 (D,E,F)
4.1V
IC1 STK5434
5.1V
0V
12.1V
16.4V
22.5V
13.2V
13.2V
16.1V
9.1V
10.3V
3.5V
0.6V
9.4V
IDL 5
IDL 12
UNR EG 21
UNR EG 12
UNR EG 12
AL 16
AL 9
R16 100
R17 5k
R14 1.5k
R15 2.4k
R13 1k
R12 1k
R11 2k
R8 600
R9 1.2k
R6 1.4k
R10 5.1k
R7 2.2k
R5 2k
R4 4.7k
R3 2k
R2 2k
R1 3k
ZD1
Q1
Q2
Q3
Q4
Q5
Q6
Q7
C1
C2
C3
P107
M GND
A GND
AL 9
AL 16
AL
TO SERVO PCB P147
P108
M GND
UNR 20
D GND
IDL 5
B DOWN
AL16
P DOWN
TO MECHA DRIVE PCB P136
TR7 2SC2603 (D,E,F)
R12 100k
R13 100k
GMA-01
22.8V
0.7V
0.4V
TR6
TR6 2SC2236(O,Y)
TO SERVO ② (SRV 9V)
R16 100k
R26 200k
R14 10k
D8 MC911
D9 MC911
D20 DS448
D21 GMA-01
R30 1.5k
5.7V
11.4V
5.1V
TR11 2SC2236 (O,Y)
4.0V
0.3V
TR5 2SC2603 (D,E,F)
R15 100k
R24 10k
C26 470/6.3(M)
P106
A GND
AL 9
TO VIDEO PCB P122
P105
AL 9
IDL 5
P DOWN
BU 5
D GND
UNR 50
A GND
IDL 12
TO DEMODU. PCB P109
P174
D GND
BU 5
P DOWN
IDL 5
TO OPERATION PCB P129
POWER SUPPLY (E) PCB V1030A5092


E C B
2SA1286
2SC2236
E C B
2SA1115
2SC2603

VOLTAGE INDICATED AT AL MODE
MESURED WITH DIGITAL TYPE TESTER

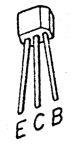
WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL. NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT

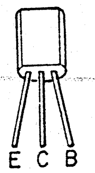
NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/6W(J)
ALL CAPACITORS IN μF 50 WV(J)

001649

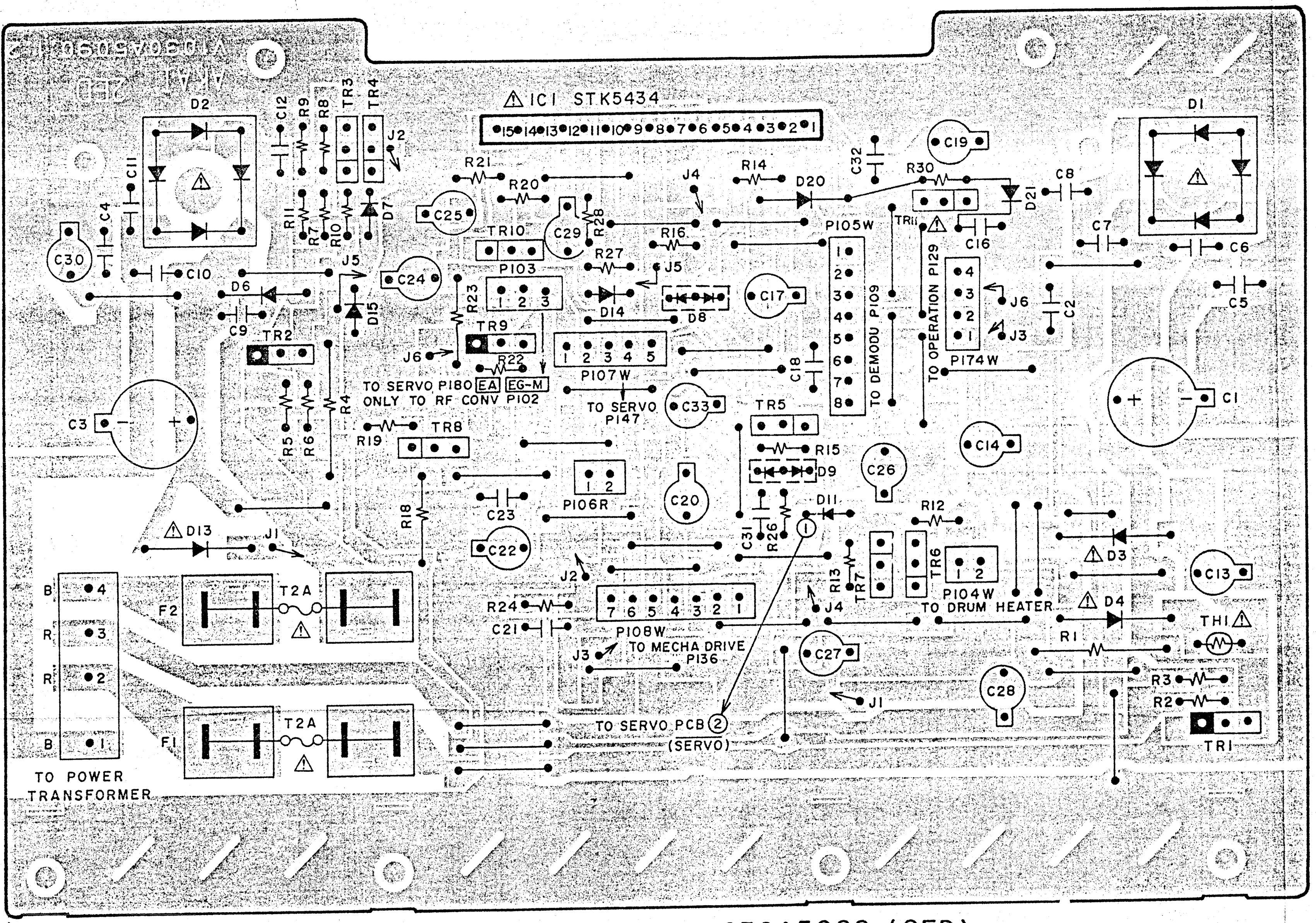
VS-303 EO/ES/EZ EA/EG/EV-M
POWER SUPPLY (E)
SCHEMATIC DIAGRAM
NO. 15-3 841204B (A2)



2SA1115
2SC2603



2SA1286
2SC2236


V1030A5092
2ED
⚠ IC1 STK5434
15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
D1
D2
C12
R9
R8
TR3
TR4
J2
R21
R20
R14
D20
C32
R30
C19
C8
D21
TR11
C16
C7
C6
C5
C2
J6
J3
P174W
TO OPERATION P129
P105W
TO DEMODU P109
C11
C4
C30
C10
D6
C9
TR2
R11
R7
R10
D7
J5
D15
C24
C25
TR10
P103
C29
R28
R27
R16
J4
J5
D14
D8
C17
R23
TR9
J6
R22
P107W
TO SERVO P180 EA EG-M
ONLY TO RF CONV P102
TO SERVO P147
C33
C18
TR5
R15
D9
C26
C14
C1
C3
R5
R6
R4
R19
TR8
R18
C23
P106R
C20
C31
R26
D11
R12
TR7
R13
TR6
P104W
TO DRUM HEATER
⚠ D3
C13
⚠ D13
J1
C22
J2
R24
C21
P108W
TO MECHA DRIVE P136
J3
J4
C27
⚠ D4
TH1 ⚠
R1
C28
R3
R2
TR1
J1
TO SERVO PCB ②
(SERVO)
①
F2
F1
T2A
B 4
R 3
R 2
B 1
TO POWER TRANSFORMER

POWER SUPPLY PCB V1030A5092 (2ED)

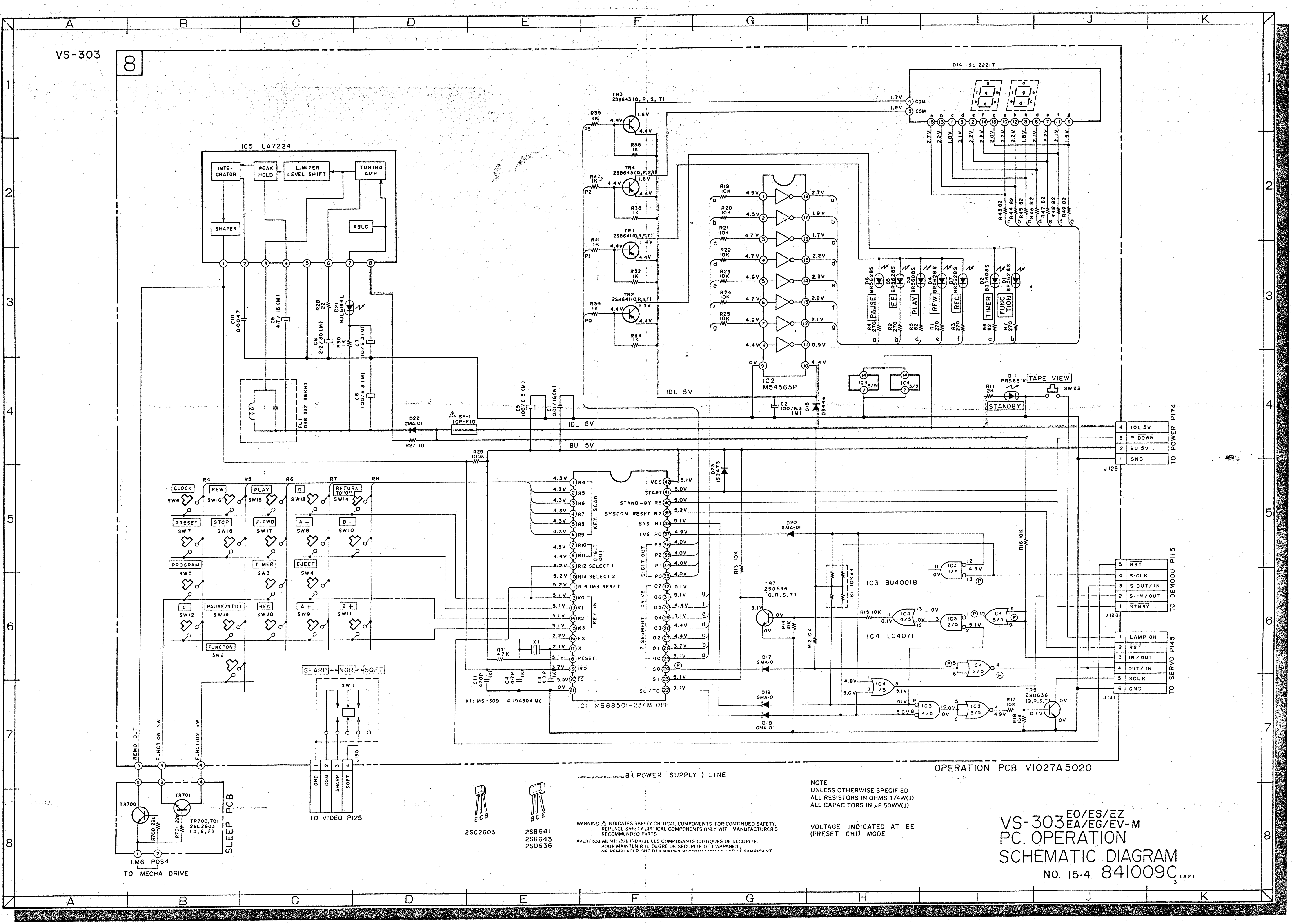
●•• = NPN TRANSISTOR

■•• = PNP TRANSISTOR

TR1,2 -------- 2SA1115(D,E,F)
TR3 to 5,7,8,10 --- 2SC2603(D,E,F)
TR6,11 --------- 2SC2236(O,Y)
TR9 ----------- 2SA1286(G,H,J)

WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.

AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT.


VS-303
8
IC5 LA7224
INTE-GRATOR
PEAK HOLD
LIMITER LEVEL SHIFT
TUNING AMP
SHAPER
ABLC
C10 0.0047
C9 47/16(M)
R28 22
D21 NJL6144L
C8 2.2/35(M)
R30 1K
C7 10/6.3(M)
C6 100/6.3(M)
FL1 038 332 38KHz
D22 GMA-01
R27 10
SF-1 ICP-F10
C5 100/6.3(M)
C1 0.01/16(N)
IDL 5V
BU 5V
R29 100K
TR3 2SB643(Q,R,S,T)
TR4 2SB643(Q,R,S,T)
TR1 2SB641(Q,R,S,T)
TR2 2SB641(Q,R,S,T)
R35 1K
R36 1K
R37 1K
R38 1K
R31 1K
R32 1K
R33 1K
R34 1K
P3
P2
P1
P0
IC2 M54565P
C2 100/6.3(M)
D16 DS446
IDL 5V
D14 SL 2221T
COM
PAUSE
FF
PLAY
REW
REC
TIMER
FUNC TION
STANDBY
TAPE VIEW
SW23
D11 PR5631K
R11 2K
IC3 5/5
IC4 5/5
CLOCK
REW
PLAY
D
RETURN TO "0"
PRESET
STOP
F FWD
A −
B −
PROGRAM
TIMER
EJECT
C
PAUSE/STILL
REC
A +
B +
FUNCTON
SW6
SW16
SW15
SW13
SW14
SW7
SW18
SW17
SW8
SW10
SW5
SW3
SW4
SW12
SW19
SW20
SW9
SW11
SW2
R4
R5
R6
R7
R8
SHARP
NOR
SOFT
SW1
IC1 MB88501-234M OPE
KEY SCAN
DIGIT OUT
KEY IN
7 SEGMENT DRIVE
VCC
START
STAND-BY R3
SYSCON RESET R2
SYS R1
IMS R0
R12 SELECT 1
R13 SELECT 2
R14 IMS RESET
EX
X
RESET
IRQ
TC
SC/TC
X1: MS-309 4.194304 MC
R51 4.7K
C11 470P
C4 47P
C3 47P
D23 1S2473
R13 10K
TR7 2SD636 (Q,R,S,T)
R14 10K
R12 10K
R15 10K
R16 10K
IC3 BU4001B
IC4 LC4071
R1 10K×4
D20 GMA-01
D17 GMA-01
D19 GMA-01
D18 GMA 01
TR8 2SD636 (Q,R,S,T)
R17 10K
R18 10K
J129
IDL 5V
P DOWN
BU 5V
GND
TO POWER P174
J128
RST
S·CLK
S OUT/IN
S·IN/OUT
STNBY
TO DEMODU P115
J131
LAMP ON
RST
IN/OUT
OUT/IN
SCLK
GND
TO SERVO P145
REMO OUT
FUNCTION SW
FUNCTION SW
J130
GND
COM
SHARP
SOFT
TO VIDEO P125
SLEEP PCB
TR700
TR701
R700 22K
R701 22K
TR700,701 2SC2603 (D,E,F)
LM6
POS4
TO MECHA DRIVE
2SC2603
ECB
BCE
2SB641
2SB643
2SD636
A
B
C
D
E
F
G
H
I
J
K
1
2
3
4
5
6
7
8

OPERATION PCB V1027A5020

B (POWER SUPPLY) LINE

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W(J)
ALL CAPACITORS IN μF 50WV(J)

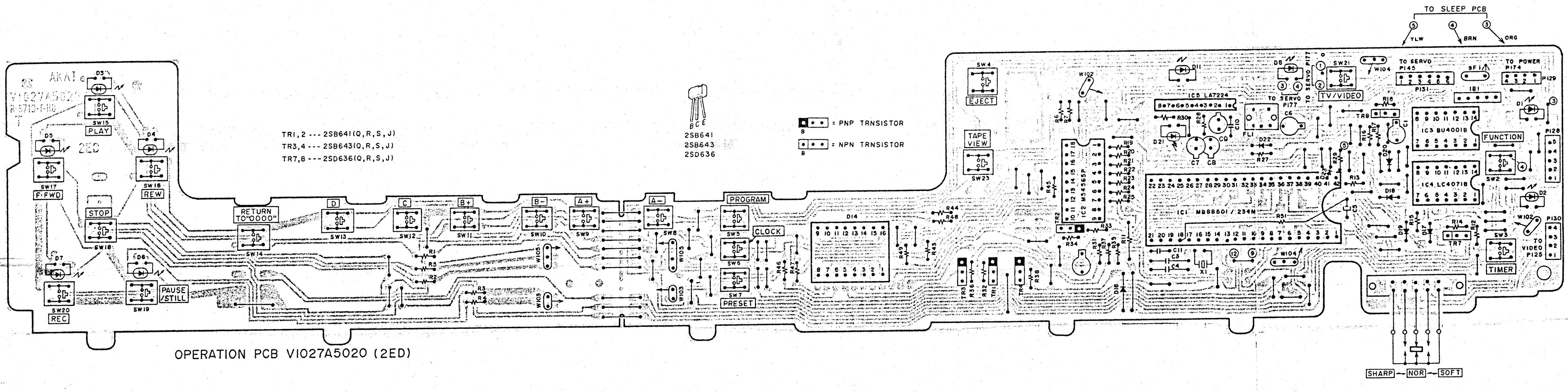
VOLTAGE INDICATED AT EE
(PRESET CH1) MODE

WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY.
REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S
RECOMMENDED PARTS

AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITE.
POUR MAINTENIR LE DEGRE DE SÉCURITE DE L'APPAREIL,
NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT

VS-303 EO/ES/EZ EA/EG/EV-M
PC. OPERATION
SCHEMATIC DIAGRAM

NO. 15-4 841009C (A2)

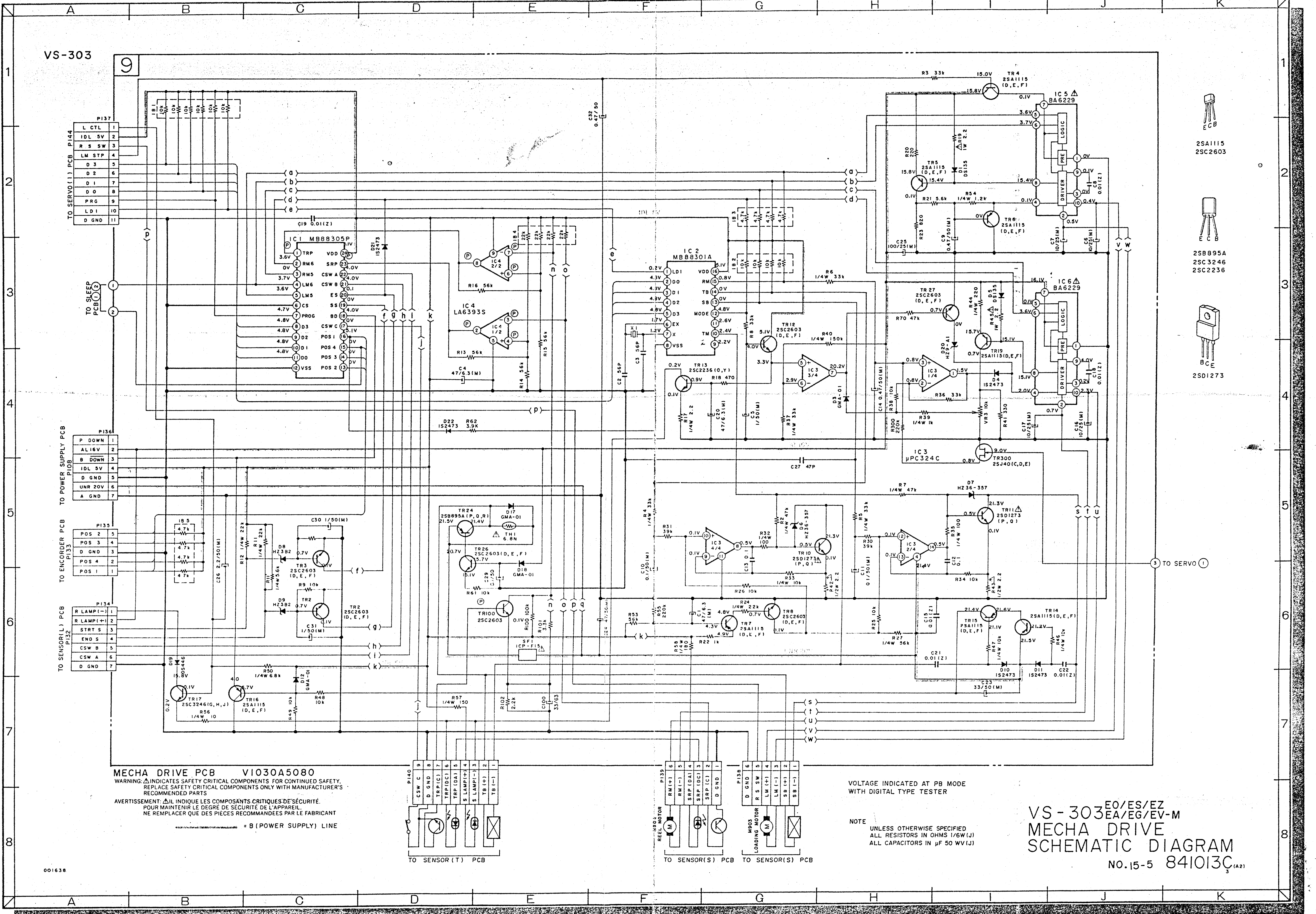

AKAI
V1027A5020
2ED
D3
SW15
PLAY
D5
D4
SW17
F·FWD
SW16
REW
STOP
SW18
D7
D6
SW20
REC
SW19
PAUSE
/STILL
RETURN
TO"0000"
SW14
D
SW13
C
SW12
B+
SW11
B−
SW10
A+
SW9
A−
SW8
W103
PROGRAM
SW5
CLOCK
SW6
SW7
PRESET
D14
R1
R2
R3
R4
R5
R43
R44
R45
R46
R47
R48
B C E
2SB641
2SB643
2SD636
B
= PNP TRNSISTOR
B
= NPN TRNSISTOR
SW4
EJECT
TAPE
VIEW
SW23
W102
R6
R7
IC2 M54565P
R19
R20
R21
R22
R23
R24
R25
TR2
R33
R34
R31
R37
R35
R11
TR3
R36
R32
TR1
TR4
R38
D16
D11
IC5 LA7224
R30
R28
C10
D21
C7
C8
C9
FL1
D22
R27
C6
D8
③
④
TO SERVO
P177
TO SERVO P177
①
②
SW21
TV/VIDEO
W104
IC1 MB88501 / 234M
R51
C5
C11
C3
C4
X1
⑫
⑨
W104
TO SERVO
P145
P131
SF1
181
TO POWER
P174
P129
TO SLEEP PCB
⑤
YLW
④
BRN
③
ORG
TR8
R18
R16
R17
C1
R29
D23
D20
R13
D18
IC3 BU4001B
IC4 LC4071B
FUNCTION
SW2
D1
D2
P128
R15
D19
D17
R14
TR7
R12
W102
SW3
TIMER
TO
VIDEO
P125
P130
SHARP
NOR
SOFT

TR1,2 --- 2SB641(Q,R,S,J)
TR3,4 --- 2SB643(Q,R,S,J)
TR7,8 --- 2SD636(Q,R,S,J)

OPERATION PCB V1027A5020 (2ED)

WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY,
REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S
RECOMMENDED PARTS

AVERTISSEMENT: ⚠IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ.
POUR MAINTENIR LE DEGRÉ DE SÉCURITE DE L'APPAREIL,
NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT


VS-303
9
TO SERVO(1) PCB P144
P137
L CTL
IDL 5V
R S SW
LM STP
D 3
D 2
D 1
D 0
PRG
LDI
D GND
TO SLEEP PCB(1)(2)
TO POWER SUPPLY PCB P108
P136
P DOWN
AL16V
B DOWN
IDL 5V
D GND
UNR 20V
A GND
TO ENCORDER PCB P133
P135
POS 2
POS 3
D GND
POS 4
POS 1
TO SENSOR(L) PCB P132
P134
R LAMP(−)
R LAMP(+)
STRT S
END S
CSW B
CSW A
D GND
IC1 MB88305P
IC2 MB88301A
IC4 LA6393S
IC3 μPC324C
IC5 BA6229
IC6 BA6229
TR300 2SJ40(C,D,E)
TO SERVO (1)
P140
CSW C
D GND
TRP(DC)
TRP(DA)
S LAMP(+)
S LAMP(−)
TB(+)
TB(−)
TO SENSOR(T) PCB
P139
RM(+)
RM(−)
SRP(DA)
SRP(C)
D GND
M904 REEL MOTOR
TO SENSOR(S) PCB
P138
D GND
R S SW
LM(+)
LM(−)
SB(+)
SB(−)
M903 LOADING MOTOR
TO SENSOR(S) PCB
2SA1115
2SC2603
2SB895A
2SC3246
2SC2236
2SD1273
001638

MECHA DRIVE PCB V1030A5080

WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY.
REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S
RECOMMENDED PARTS

AVERTISSEMENT: ⚠IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ.
POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL.
NE REMPLACER QUE DES PIECES RECOMMANDEES PAR LE FABRICANT

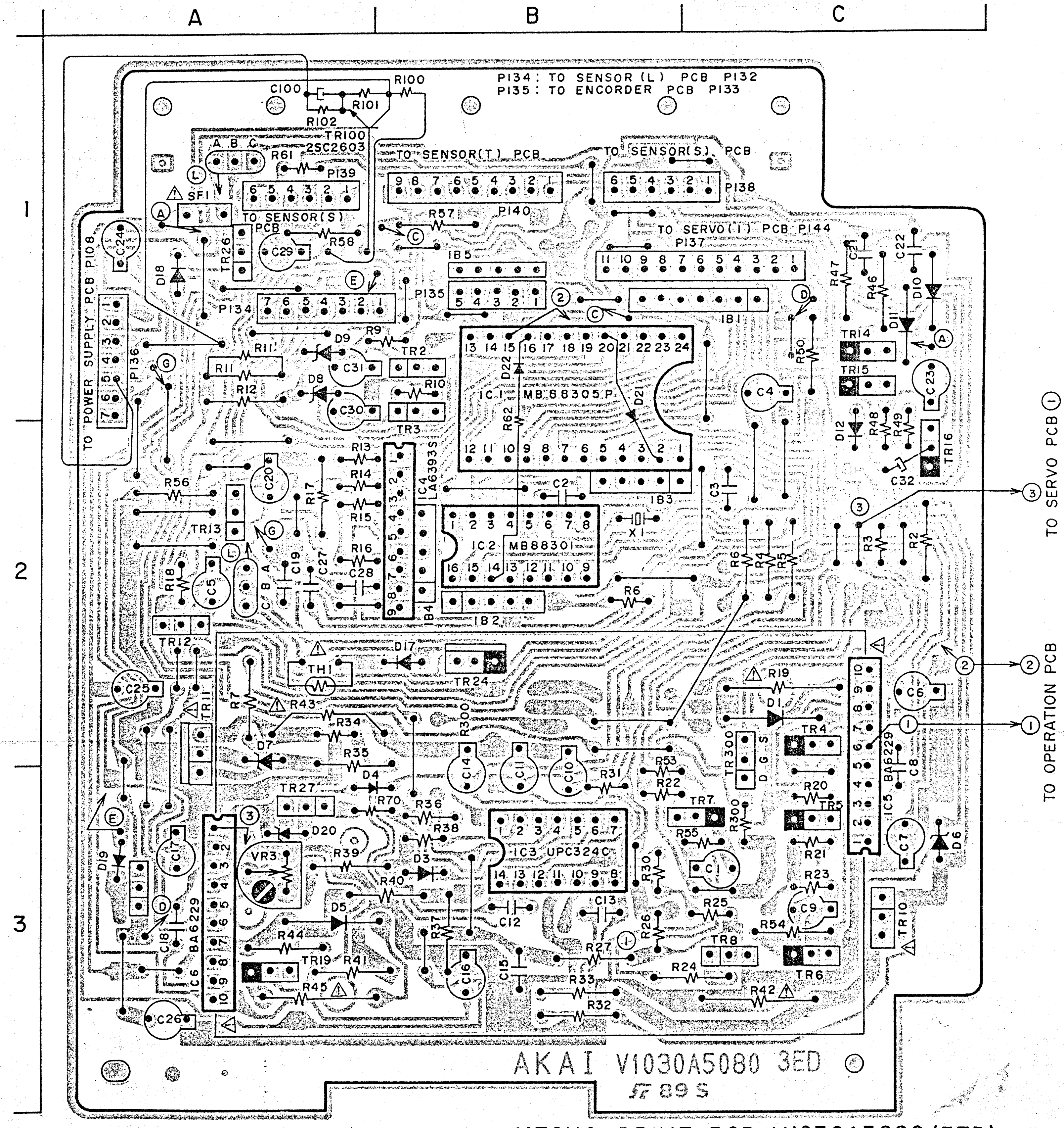
▬▬▬ = B (POWER SUPPLY) LINE

VOLTAGE INDICATED AT PB MODE
WITH DIGITAL TYPE TESTER

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/6W(J)
ALL CAPACITORS IN μF 50 WV(J)

VS-303 EO/ES/EZ EA/EG/EV-M
MECHA DRIVE SCHEMATIC DIAGRAM

NO.15-5 841013C$_3$ (A2)


A
B
C
1
2
3
P134 : TO SENSOR (L) PCB P132
P135 : TO ENCORDER PCB P133
TO SENSOR(T) PCB
TO SENSOR(S) PCB
TO SENSOR(S)
TO SERVO(I) PCB P144
TO POWER SUPPLY PCB P108
P136
P137
P138
P139
P140
IC1 MB88305P
IC2 MB88301
IC3 UPC324C
IC4 LA6393S
IC5 BA6229
IC6 BA6229
TR100 2SC2603
VR3
X1
TH1
TO SERVO PCB ①
TO OPERATION PCB
AKAI V1030A5080 3ED
89 S

MECHA DRIVE PCB V1030A5080(3ED)

WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

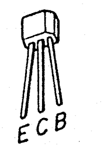
TR4 to 7,14 to 16,19...2SA1115(D,E,F)
TR2,3,8,12,23,26,27....2SC2603(D,E,F)
TR10,11..................2SD1273(P,Q)
TR13.....................2SC2236(O,Y)
TR17.....................2SC3246(G.H.J)
TR24.....................2SB895A(P,Q,R)

LOCATION OF COMPONENT

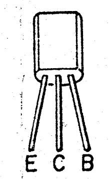
TRs
TR2....B1
TR3....B1
TR4....C2
TR5....C3
TR6....C3
TR7....C3
TR8....C3
TR10...C3
TR11...A2
TR12...A2
TR13...A2
TR14...C1
TR15...C1
TR16...C2
TR17...A3
TR19...A3
TR21...C2
TR23...B1
TR24...B2
TR26...A1
TR27...A3
TR300..B2

ICs
IC1....B1
IC2....B2
IC3....B3
IC4....B2
IC5....B2
IC6....A3

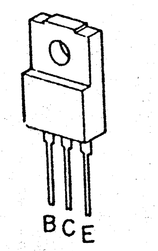
VR3 --- TAKE UP REEL TORQUE



2SA1115
2SC2603



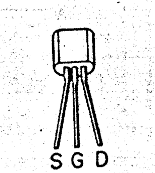
2SB895A
2SC3246
2SC2236



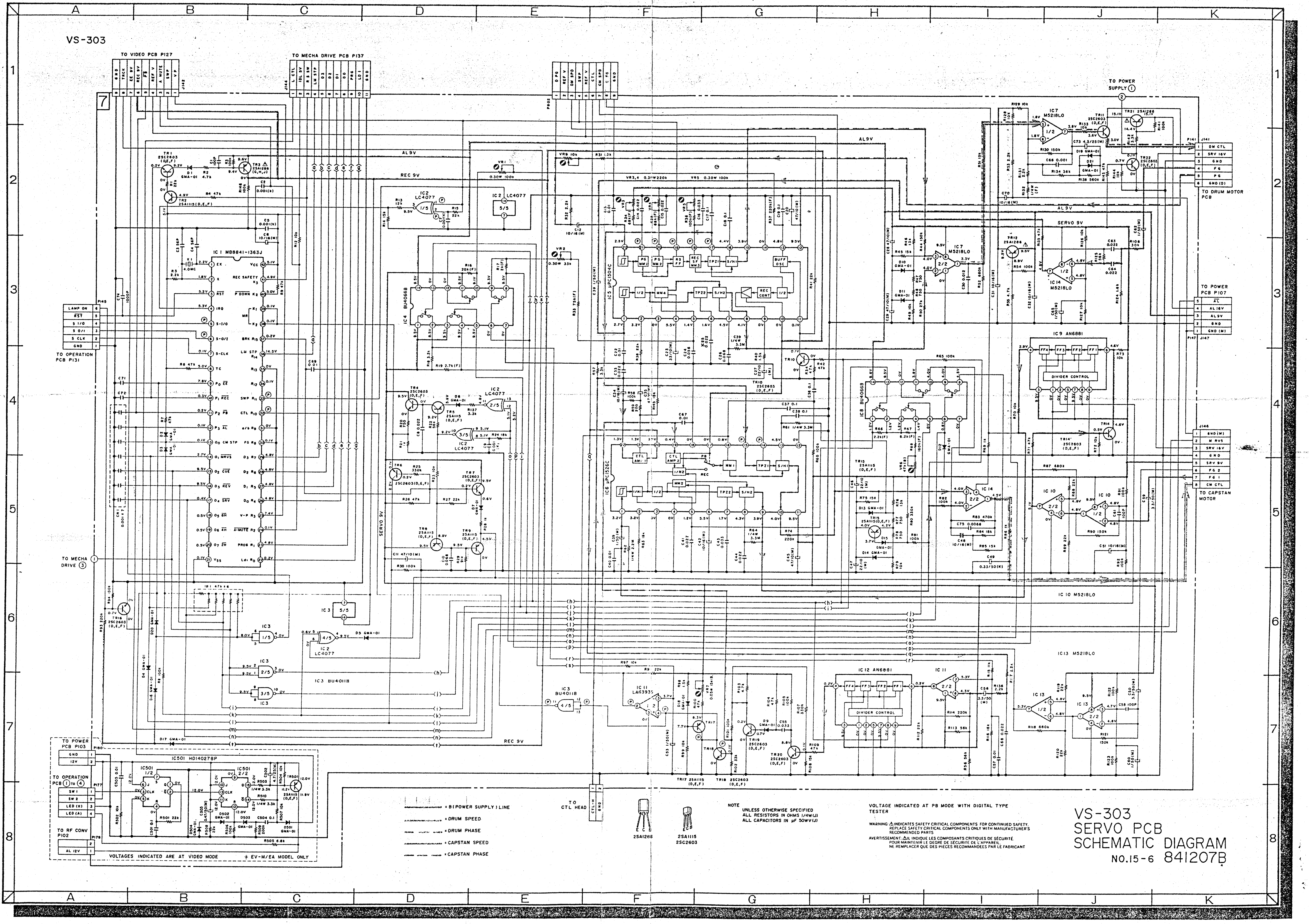
2SD1273

■●● = PNP TRANSISTOR
B

●●● = NPN TRANSISTOR
B



2SJ40


VS-303
7
TO VIDEO PCB P127
TO MECHA DRIVE PCB P137
J142
J144
P802
GND
TRCK
REC 9V
PB
REF V
A MUTE
SWP
V.P
L CTL
IDL SV
R SS SW
LW STP
D3
D2
D1
D0
PRG
LD1
D PG
REF V
DM SPD
SWP
REF V
CTL
CM SPD
C FG
TO POWER SUPPLY ①
TR1 2SC2603 (D,E,F)
TR2 2SA1115(D,E,F)
TR3 2SA1286 (G,H,J)
AL 9V
REC 9V
SERVO 9V
IC1 M58841-1363J
IC2 LC4077
IC3 BU4011B
IC4 BU4066B
IC5 μPC1504C
IC6 μPC1526C
IC7 M5218L0
IC8 BU4066B
IC9 AN6881
IC10 M5218L0
IC11 LA6393S
IC12 AN6881
IC13 M5218L0
IC14 M5218L0
IC501 HD14027BP
DIVIDER CONTROL
P145
LAMP ON
RST
S I/O
S 0/I
S CLK
GND
TO OPERATION PCB P131
TO MECHA DRIVE ③
P141 J141
DM CTL
SRV 16V
GND
FG
PG
GND (D)
TO DRUM MOTOR PCB
TO POWER PCB P107
AL
AL 16V
AL 9V
GND
GND (M)
P147 J147
J146
GND (M)
M RVS
SRV 16V
GND
SRV 9V
FG 2
FG 1
CM CTL
TO CAPSTAN MOTOR
TO POWER PCB P103
P180
GND
12V
TO OPERATION PCB ①to④
P177
SW 1
SW 2
LED (K)
LED (A)
TO RF CONV P102
P179
AL 12V
VOLTAGES INDICATED ARE AT VIDEO MODE
⚠ EV-M/EA MODEL ONLY
TO CTL HEAD
CTL-H
GND
E C B
2SA1286
ECB
2SA1115
2SC2603
A
B
C
D
E
F
G
H
I
J
K
1
2
3
4
5
6
7
8

= B (POWER SUPPLY) LINE
= DRUM SPEED
= DRUM PHASE
= CAPSTAN SPEED
= CAPSTAN PHASE

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W(J)
ALL CAPACITORS IN μF 50WV(J)

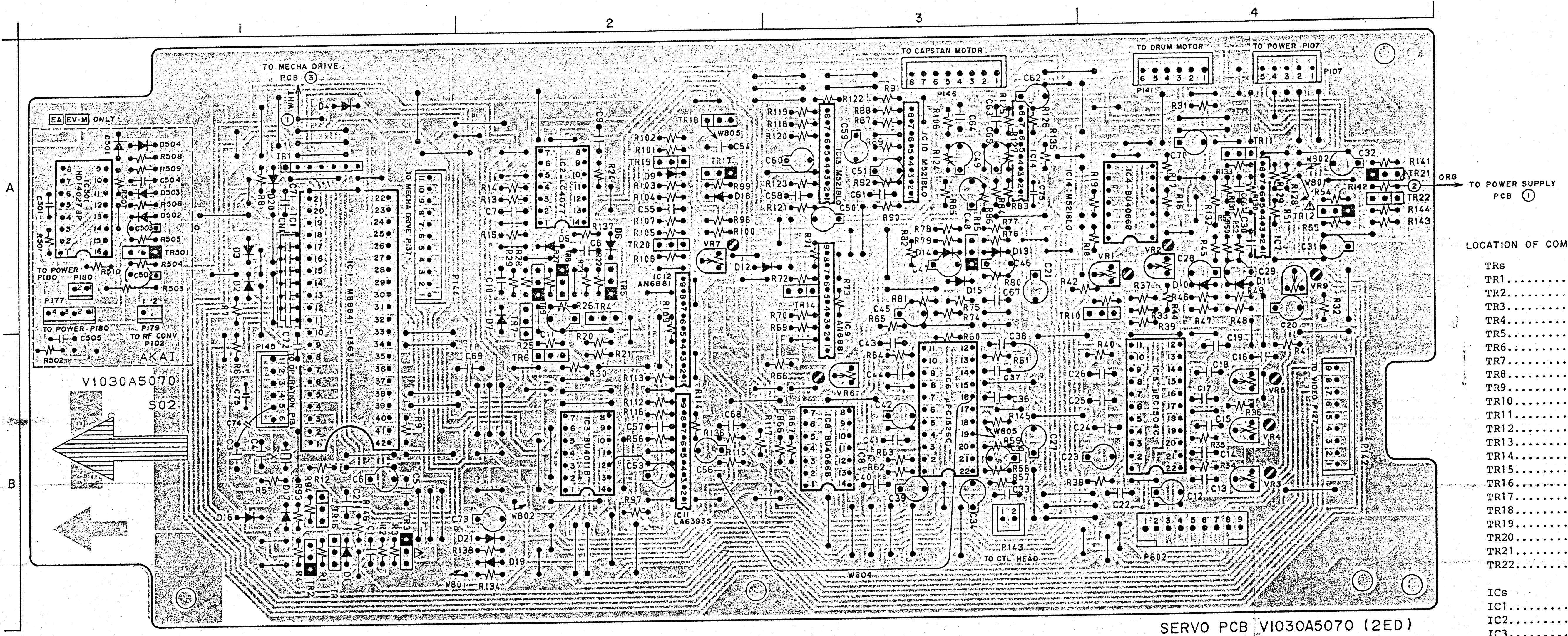
VOLTAGE INDICATED AT PB MODE WITH DIGITAL TYPE TESTER

WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIECES RECOMMANDEES PAR LE FABRICANT

VS-303
SERVO PCB
SCHEMATIC DIAGRAM

NO.15-6 841207B


1
2
3
4
A
B
TO MECHA DRIVE PCB ③
TO CAPSTAN MOTOR
P146
TO DRUM MOTOR
P141
TO POWER P107
P107
ORG
TO POWER SUPPLY PCB ①
EA EV-M ONLY
IC501 HD14027BP
TO POWER P180
P180
P177
TO POWER P180
P179
TO RF CONV P102
AKAI
V1030A5070
S02
IB1
IC1 MB8841-1363U
TO MECHA DRIVE P137
P137
IC2 TC4077
IC3 BU4011B
IC4 BU4066B
IC5 µPC1504C
IC6 µPC1526C
IC7
IC8 BU4066B
IC9 AN6881
IC10 M5218L
IC11 LA6393S
IC12 AN6881
IC13 M5218L
IC14 M5218L
TO VIDEO P127
P127
P143
TO CTL HEAD
P802
P145
TO OPERATION P131
W801
W802
W804
W805
VR1
VR2
VR3
VR4
VR5
VR6
VR7
VR9

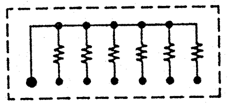
SERVO PCB V1030A5070 (2ED)

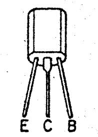
LOCATION OF COMPONENTS

TRs	
TR1	B1
TR2	B1
TR3	B1
TR4	B2
TR5	A2
TR6	B2
TR7	A2
TR8	A2
TR9	A2
TR10	A4
TR11	A4
TR12	A4
TR13	A2
TR14	A3
TR15	A3
TR16	B1
TR17	A2
TR18	A2
TR19	A2
TR20	A2
TR21	A4
TR22	A4

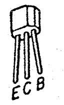
ICs	
IC1	AB1
IC2	A2
IC3	B2
IC4	A4
IC5	B4
IC6	B3
IC7	A4
IC8	B3
IC9	A3
IC10	A3
IC11	B2
IC12	AB2
IC13	A3
IC14	A3

IB1 47k × 6





2SA1286



2SA1115
2SC2603

TR1,4,6,7,10,11,13,
14,16,18,19,20,22 --- 2SC2603
TR2,5,8,9,15,17 ------ 2SA1115
TR3,12,21 --------- 2SA1268

●●● = NPN TRANSISTOR
B

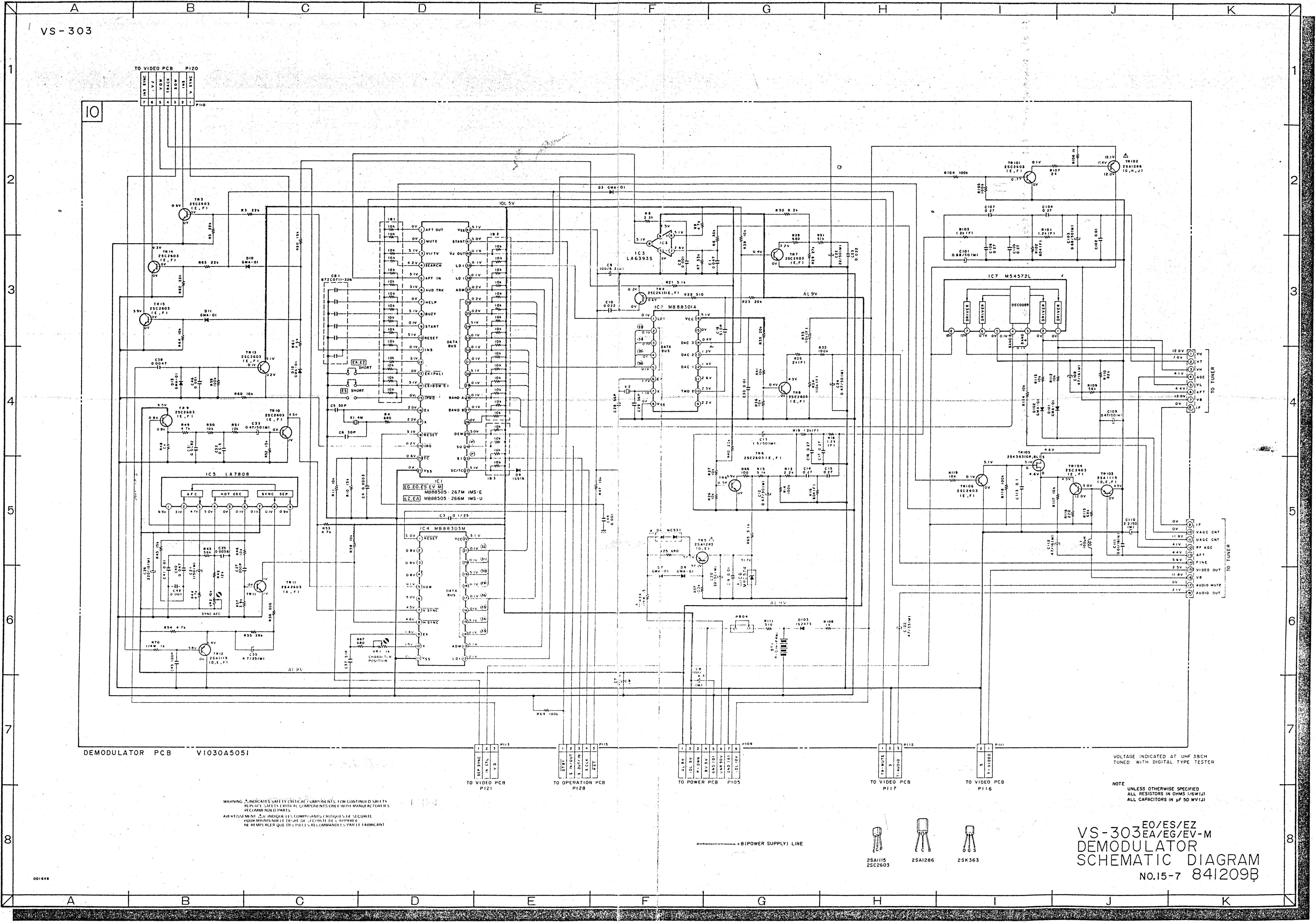
■●● = PNP TRANSISTOR
B

VR1...BUFFER OSC
VR2...DRUM MOTOR NORMAL SPEED
VR3...PB SW'ing POINT (CH1)
VR4...PB SW'ing POINT (CH2)
VR5...REC SW'ing POINT
VR6...CAPSTAN MOTOR NORMAL SPEED
VR7...TRACKING PRESET

VR9...DRUM PG LEVEL

WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY.
REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ.
POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL,
NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT


VS-303
10
TO VIDEO PCB P120
INS SYNC
V J
VOW
TRACK
SOW
INS
V SYNC
P110
TR3 2SC2603 (E,F)
TR14 2SC2603 (E,F)
TR15 2SC2603 (E,F)
TR13 2SC2603 (E,F)
TR9 2SC2603 (E,F)
TR10 2SC2603 (E,F)
TR11 2SA12603 (E,F)
TR12 2SA1115 (E,F)
IC5 LA7808
AFC
HOT OSC
SYNC SEP
SYNC AFC
IDL 5V
IB1
IB2
IB3
AFT OUT
MUTE
VI/TV
SEARCH
AFT IN
AUD TRK
HELP
BUZY
START
RESET
INS
EX(PAL)
ES(BSW S)
EX
X
RESET
IRQ
TC
VSS
VSS
START
VJ OUT
LD
ADM
DATA BUS
BAND A
BAND B
DEM
SO
SI
SC/TC
EA.EZ SHORT
ES SHORT
CB1 B72C0711-32%
X1 4M
IC1
EG.EO.ES.EV-M MB88505-267M IMS-E
EZ.EA MB88505-266M IMS-U
IC4 MB88303M
VOW
H SYNC
V SYNC
VR1 1k CHARACTER POSITION
AL 9V
D3 GMA-01
D10 GMA-01
D11 GMA-01
D9 1SS16
IC3 LA6393S
TR4 2SC2631(E,F)
IC2 MB88301A
DATA BUS
DAC 3
DAC 2
DAC 1
TMO
TR7 2SC2603 (E,F)
TR8 2SC2603 (E,F)
TR6 2SC2603 (E,F)
TR5 2SA1283 (O,E)
D4 MC931
D7 GMA-01
D8 GMA-01
P804
D103 1S2473
BT1
TR101 2SC2603 (E,F)
TR102 2SA1286 (G,H,J)
IC7 M54572L
DRIVER
DECODER
BAND
TR105 2SK363(GR,BL)
TR106 2SC2603 (E,F)
TR104 2SC2603 (E,F)
TR103 2SA1115 (O,E,F)
VU
VT
VH
AGC
VL
AFT
VB
IF
TO TUNER
IF
VAGC CNT
UAGC CNT
RF AGC
AFT
FINE
VIDEO OUT
VB
AUDIO MUTE
AUDIO OUT
TO TUNER
DEMODULATOR PCB V1030A5051
P113
SEP SYNC
IN CTL
V.D
TO VIDEO PCB P121
P115
STBY
S IN/OUT
S OFF/IN
S CLK
RST
TO OPERATION PCB P128
P109
AL 9V
IDL 5V
P-ON
B/5V
GND
UNR 30V
GND
DL 12V
TO POWER PCB P105
P112
TA-MUTE
S
T-AUDIO
TO VIDEO PCB P117
P111
S
T-VIDEO
TO VIDEO PCB P116
B(POWER SUPPLY) LINE
2SA1115
2SC2603
2SA1286
2SK363
A B C D E F G H I J K
1 2 3 4 5 6 7 8
001648

WARNING ⚠ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY
REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S
RECOMMENDED PARTS

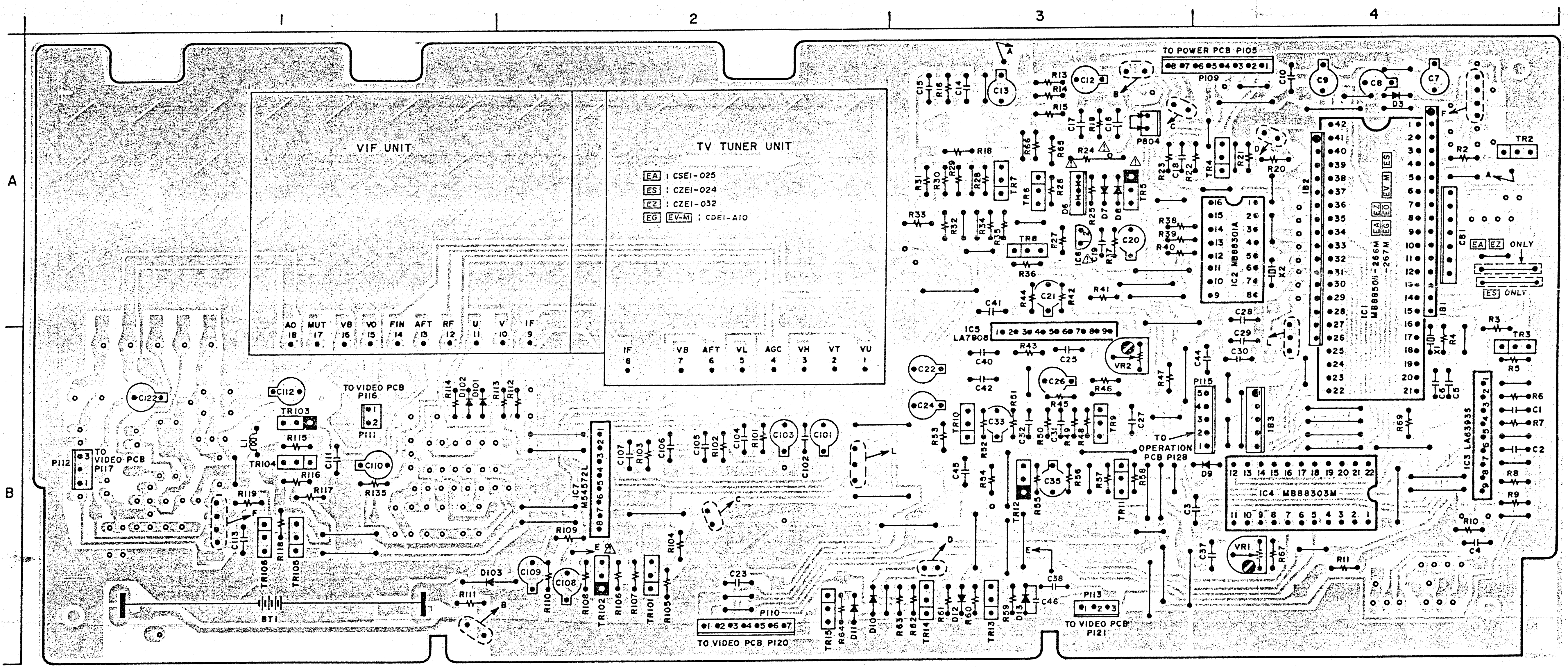
AVERTISSEMENT ⚠ INDIQUE LES COMPOSANTS CRITIQUES DE SECURITE
POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL
NE REMPLACER QUE DES PIECES RECOMMANDEES PAR LE FABRICANT

VOLTAGE INDICATED AT UHF 38CH
TUNED WITH DIGITAL TYPE TESTER

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/6W(J)
ALL CAPACITORS IN μF 50 WV(J)

VS-303 EO/ES/EZ EA/EG/EV-M DEMODULATOR SCHEMATIC DIAGRAM

NO.15-7 841209B


1
2
3
4
A
B
VIF UNIT
AO 18
MUT 17
VB 16
VO 15
FIN 14
AFT 13
RF 12
U 11
V 10
IF 9
TV TUNER UNIT
EA : CSE1-025
ES : CZE1-024
EZ : CZE1-032
EG EV-M : CDE1-A10
IF 8
VB 7
AFT 6
VL 5
AGC 4
VH 3
VT 2
VU 1
TO POWER PCB P105
P109
TO VIDEO PCB P116
P111
TO VIDEO PCB P117
P112
TO VIDEO PCB P120
P110
TO VIDEO PCB P121
P113
TO OPERATION PCB P128
P115
P804
IC1 MB88501-266M -267M
IC2 MB88301A
IC3 LA63935
IC4 MB88303M
IC5 LA7808
IC6
IC7 M54572L
IB1
IB2
IB3
CB1
EA EZ ONLY
ES ONLY
VR1
VR2
BT1
X1
X2
TR2
TR3
TR4
TR5
TR6
TR7
TR8
TR9
TR10
TR11
TR12
TR13
TR14
TR15
TR101
TR102
TR103
TR104
TR105
TR106

DEMODULATOR PCB V1030A5051 (2ED)

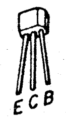
LOCATION OF COMPONENTS

TRs		ICs	
TR2	A4	IC1	A4
TR3	B4	IC2	A4
TR4	A4	IC3	B4
TR5 to 8	A3	IC4	B4
TR9 to 15	B3	IC5	A3
TR101	B2	IC6	A3
TR102	B2	IC7	B2
TR103	B1		
TR104	B1		
TR105	B1		
TR106	B1		
TR120	B1		

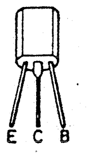
TR2,3,4,6 to 11, 13, 14,15,101,104,106	2SC2603
TR5	2SA1283
TR12,103	2SA1115
TR102	2SA1286
TR105	2SK363

B [• • •] = NPN TRANSISTOR

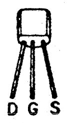
B [● • •] = PNP TRANSISTOR



2SA1115
2SC2603



2SA1286
2SA1283

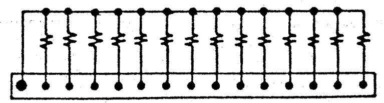


2SK363

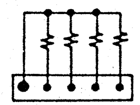
VR1: CHARACTOR POSITION
VR2: SYNC AFC

WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

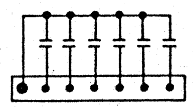
AVERTISSEMENT: ⚠IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT



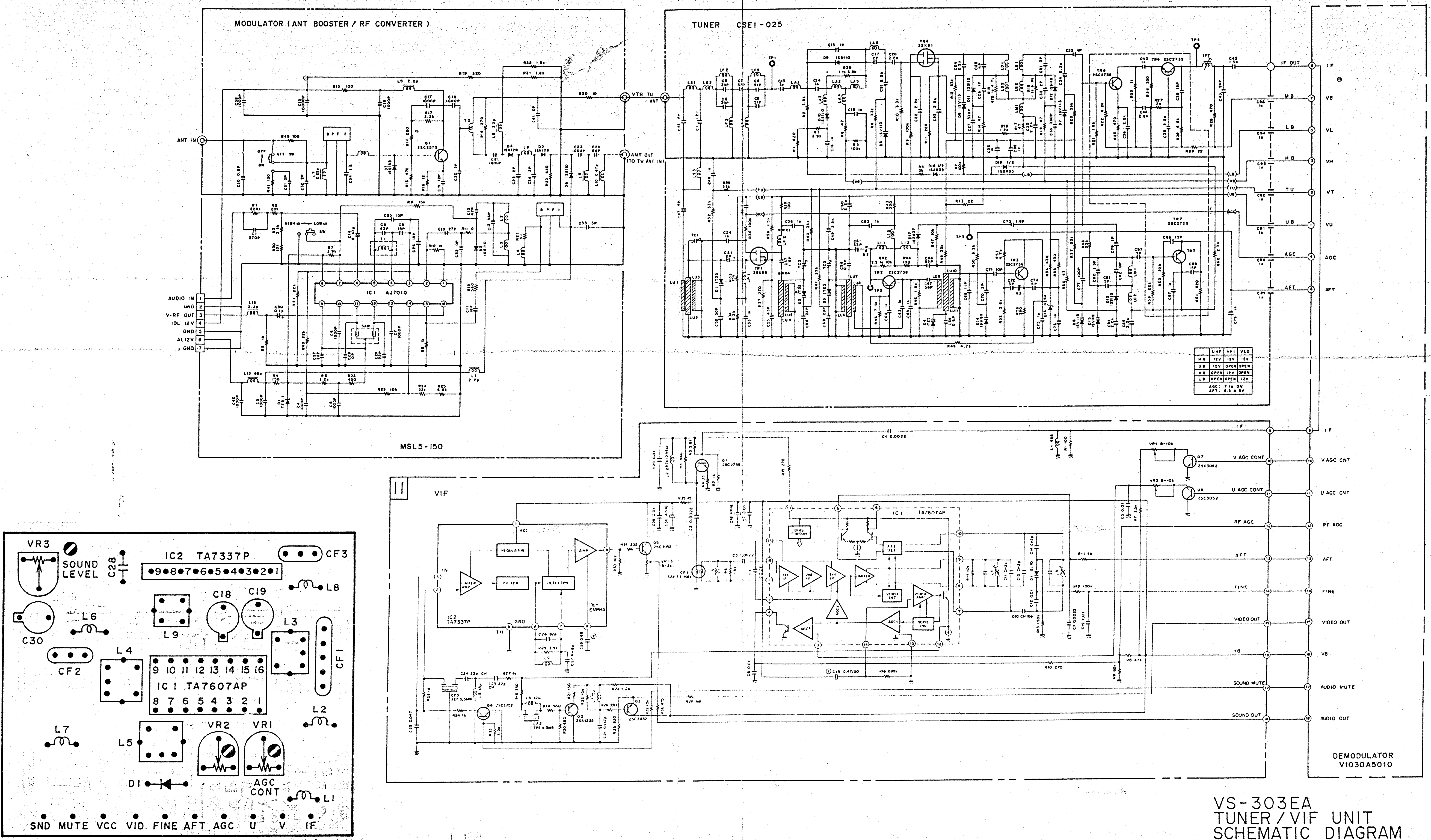
IB1, 2



IB3



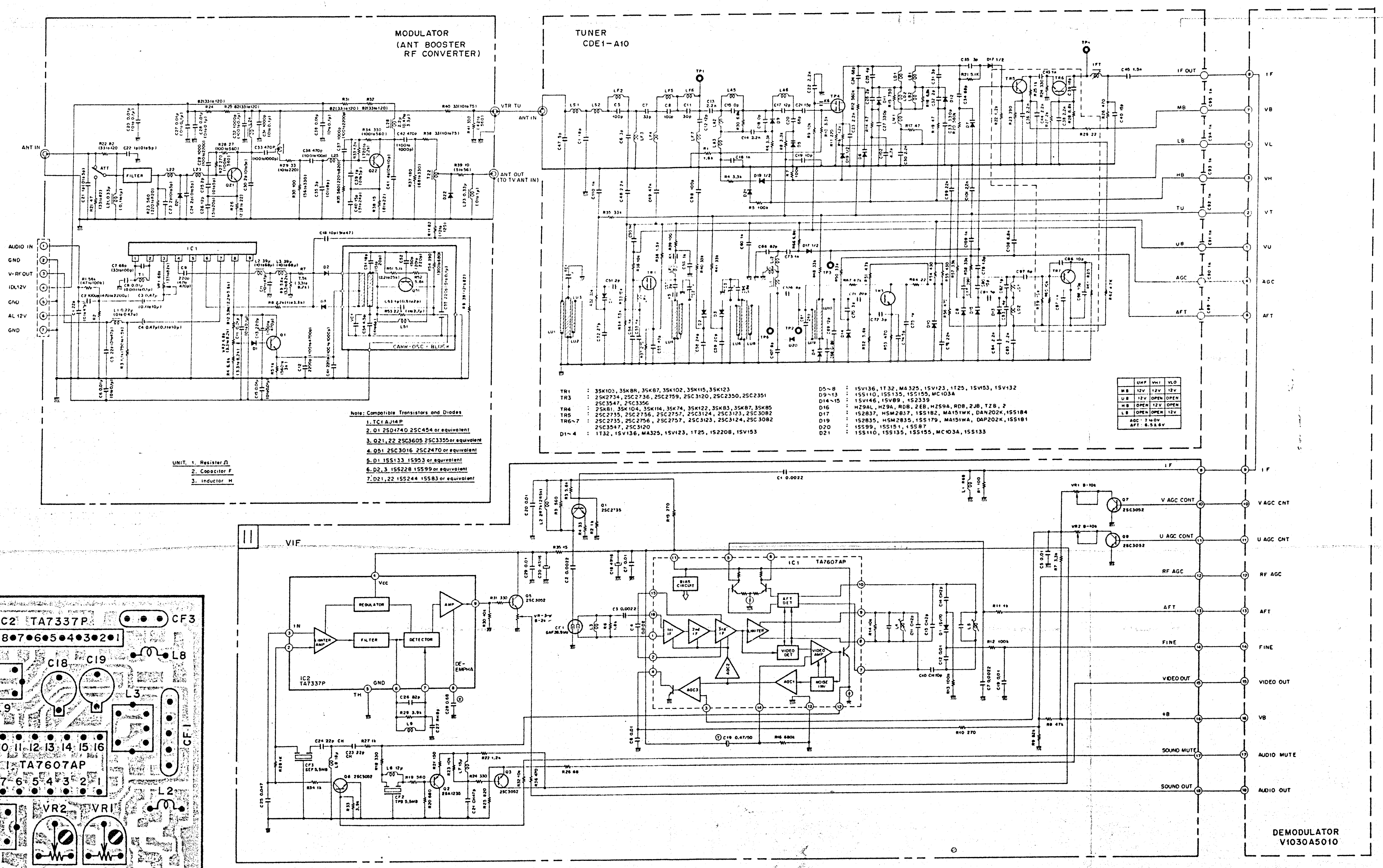
CB1



MODULATOR (ANT BOOSTER / RF CONVERTER)
ANT IN
VTR TU ANT
ANT OUT (TO TV ANT IN)
ATT. SW
BPF 2
BPF 1
Q1 2SC2570
IC1 AJ7010
SAW
HIGH ch / LOW ch SW
AUDIO IN 1
GND 2
V-RF OUT 3
IDL 12V 4
GND 5
AL 12V 6
GND 7
MSL5-150
TUNER CSE1-025
TP1
TP2
TP3
TP4
TR1 3SK80
TR2 2SC2736
TR3 2SC2736
TR4 3SK81
TR5 2SC2735
TR6 2SC2735
TR7 2SC2735
IFT
C45 1.5n
IF OUT
MB
LB
HB
TU
UB
AGC
AFT
C95 1n
C94 1n
C93 1n
C92 1n
C91 1n
C90 1n
C89 1n
UHF | VHI | VLO
MB | 12V | 12V | 12V
UB | 12V | OPEN | OPEN
HB | OPEN | 12V | OPEN
LB | OPEN | OPEN | 12V
AGC: 7 to 0V
AFT: 6.5 ± 6V
IF
VB
VL
VH
VT
VU
AGC
AFT
II
VIF
IC2 TA7337P
LIMITER AMP
MODULATOR
FILTER
DETECTOR
AMP
DE-EMPHA
VCC
GND
IN
TH
IC1 TA7607AP
BIAS CIRCUIT
1st IF
2nd IF
3rd IF
LIMITER
AFT DET
VIDEO DET
VIDEO AMP
NOISE
AGC
Q1 2SC2735
Q2 2SA1235
Q3 2SC3052
Q5 2SC3052
Q7 2SC3052
Q8 2SC3052
VR1 B-10k
VR2 B-10k
CF1
CF2
CF3
V AGC CONT
U AGC CONT
RF AGC
AFT
FINE
VIDEO OUT
+B
SOUND MUTE
SOUND OUT
IF
V AGC CNT
U AGC CNT
RF AGC
AFT
FINE
VIDEO OUT
VB
AUDIO MUTE
AUDIO OUT
DEMODULATOR
V1030A5010
VR3
SOUND LEVEL
C28
IC2 TA7337P
9 8 7 6 5 4 3 2 1
CF3
L8
L6
C18
C19
C30
L9
L3
CF1
CF2
L4
9 10 11 12 13 14 15 16
IC1 TA7607AP
8 7 6 5 4 3 2 1
L2
L7
L5
VR2
VR1
AGC CONT
D1
L1
SND MUTE VCC VID FINE AFT AGC U V IF
A B C D E F G H I J K
1 2 3 4 5 6 7 8

VIF PCB 6A00068A1

VS-303EA
TUNER / VIF UNIT
SCHEMATIC DIAGRAM
NO. 15-8 850108A


MODULATOR
(ANT BOOSTER
RF CONVERTER)
ANT IN
VTR TU
ANT OUT
(TO TV ANT IN)
AUDIO IN
GND
V-RF OUT
IDL12V
GND
AL 12V
GND
FILTER
IC1
CARR·OSC·BLOCK
TUNER
CDE1−A10
IF OUT
MB
LB
HB
TU
UB
AGC
AFT
VIF
IC2
TA7337P
REGULATOR
FILTER
DETECTOR
AMP
DE-
EMPHA
IC1 TA7607AP
VIDEO DET
AGC
NOISE
V AGC CONT
U AGC CONT
RF AGC
FINE
VIDEO OUT
+B
SOUND MUTE
SOUND OUT
IF
VB
VL
VH
VT
VU
V AGC CNT
U AGC CNT
AUDIO MUTE
AUDIO OUT
DEMODULATOR
V1030A5010

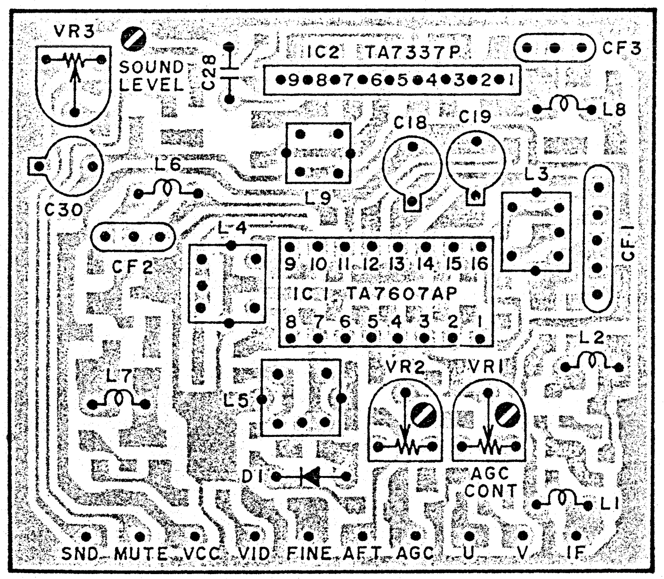
Note: Compatible Transistors and Diodes
1. TC1 AJ14P
2. Q1 2SD1740 2SC454 or equivalent
3. Q21, 22 2SC3605 2SC3355 or equivalent
4. Q51 2SC3016 2SC2470 or equivalent
5. D1 1SS133 1S953 or equivalent
6. D2, 3 1SS228 1SS99 or equivalent
7. D21, 22 1SS244 1SS83 or equivalent

UNIT. 1. Resister Ω
2. Capacitor F
3. Inductor H

TR1 : 3SK103, 3SK88, 3SK87, 3SK102, 3SK115, 3SK123
TR3 : 2SK2734, 2SC2736, 2SC2759, 2SC3120, 2SC2350, 2SC2351
2SC3547, 2SC3356
TR4 : 2SK81, 3SK104, 3SK114, 3SK74, 3SK122, 3SK83, 3SK87, 3SK85
TR5 : 2SC2735, 2SC2756, 2SC2757, 2SC3124, 2SC3123, 2SC3082
TR6~7 : 2SC2735, 2SC2756, 2SC2757, 2SC3123, 2SC3124, 2SC3082
2SC3547, 2SC3120
D1~4 : 1T32, 1SV136, MA325, 1SV123, 1T25, 1S2208, 1SV153

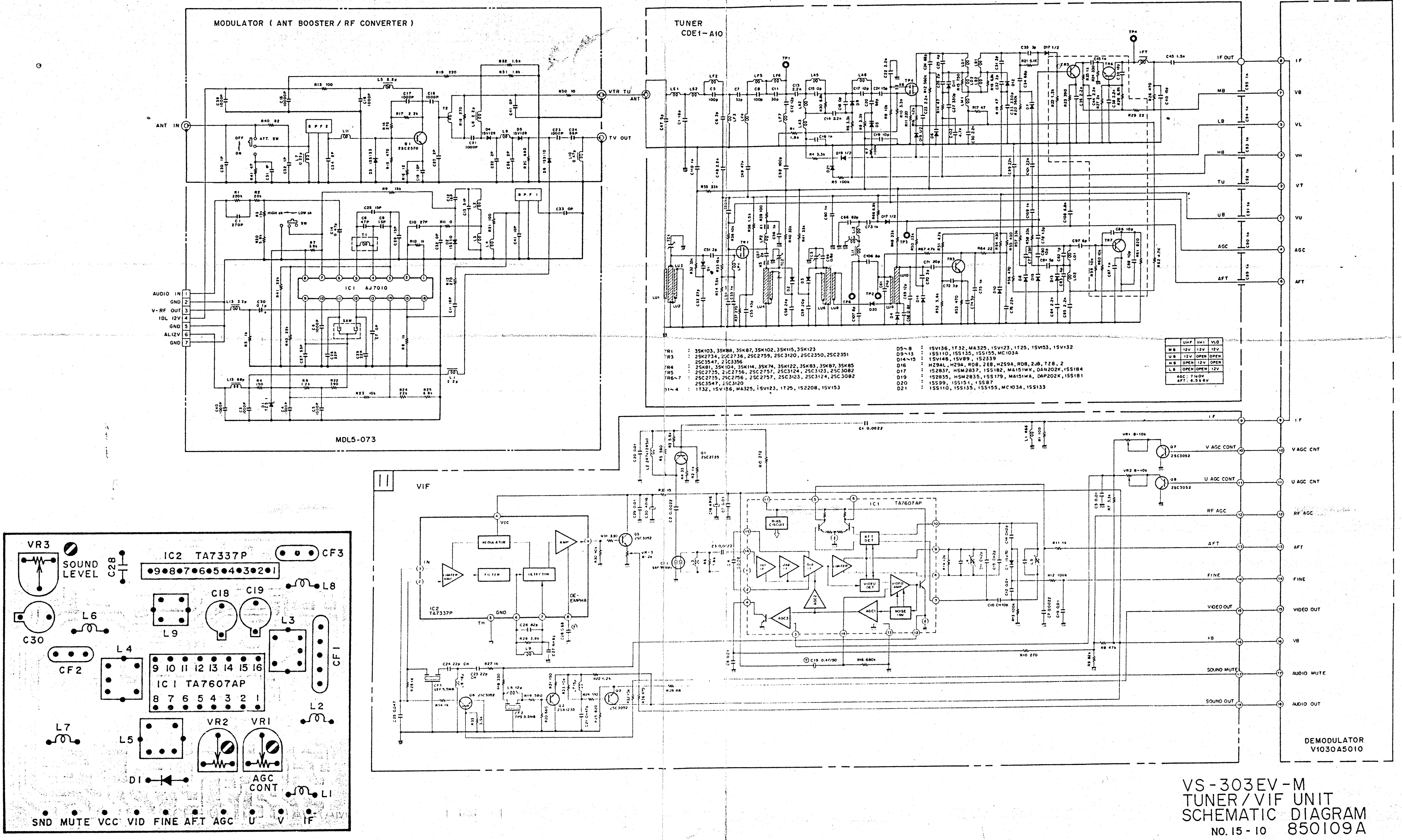
D5~8 : 1SV136, 1T32, MA325, 1SV123, 1T25, 1SV153, 1SV132
D9~13 : 1SS110, 1SS135, 1SS155, MC103A
D14~15 : 1SV146, 1SV89, 1S2339
D16 : HZ9AL, HZ9A, RD8, 2EB, HZS9A, RD8, 2JB, TZB, 2
D17 : 1S2837, HSM2837, 1SS182, MA151WK, DAN202K, 1SS184
D19 : 1S2835, HSM2835, 1SS179, MA151WA, DAP202K, 1SS181
D20 : 1SS99, 1SS151, 1SS87
D21 : 1SS110, 1SS135, 1SS155, MC103A, 1SS133

	UHF	VHI	VLO
MB	12V	12V	12V
UB	12V	OPEN	OPEN
HB	OPEN	12V	OPEN
LB	OPEN	OPEN	12V
AGC : 7 to 0V AFT : 6.5 ± 6V			


VR3
SOUND
LEVEL
C28
IC2 TA7337P
9 8 7 6 5 4 3 2 1
CF3
C18
C19
L8
L6
L9
L3
C30
CF2
L4
CF1
9 10 11 12 13 14 15 16
IC1 TA7607AP
8 7 6 5 4 3 2 1
L2
L7
L5
VR2
VR1
D1
AGC
CONT
L1
SND MUTE VCC VID FINE AFT AGC U V IF

VIF PCB 6A00068A1

VS-303EG
TUNER/VIF UNIT
SCHEMATIC DIAGRAM
NO.15-9 841211A


MODULATOR (ANT BOOSTER / RF CONVERTER)
ANT IN
VTR TU
TV OUT
ATT SW
B P F 2
B P F 1
IC1 AJ7010
SAW
HIGH ch
LOW ch
AUDIO IN
GND
V-RF OUT
IDL 12V
GND
AL12V
GND
MDL5-073
TUNER
CDE1-A10
ANT
TP1
TP2
TP3
TP4
TP6
IF OUT
MB
LB
HB
TU
UB
AGC
AFT
IF
VB
VL
VH
VT
VU
VIF
IC1 TA7607AP
IC2 TA7337P
VCC
REGULATOR
AMP
FILTER
DETECTOR
LIMITER AMP
DE-EMPHA
GND
BIAS CIRCUIT
AFT DET
VIDEO DET
VIDEO AMP
AGC1
AGC2
NOISE INV
Q1 2SC2735
Q7 2SC3052
Q8 2SC3052
VR1 B-10k
VR2 B-10k
V AGC CONT
U AGC CONT
RF AGC
FINE
VIDEO OUT
+B
SOUND MUTE
SOUND OUT
V AGC CNT
U AGC CNT
AUDIO MUTE
AUDIO OUT
DEMODULATOR
V1030A5010
VR3
SOUND LEVEL
C28
IC2 TA7337P
CF3
C18
C19
L8
L6
L9
L3
C30
L4
CF2
CF1
IC1 TA7607AP
9 10 11 12 13 14 15 16
8 7 6 5 4 3 2 1
L7
L5
VR2
VR1
L2
D1
AGC CONT
L1
SND MUTE VCC VID FINE AFT AGC U V IF

TR1 : 3SK103, 3SK88, 3SK87, 3SK102, 3SK115, 3SK123
TR3 : 2SK2734, 2SC2736, 2SC2759, 2SC3120, 2SC2350, 2SC2351
2SC3547, 2SC3356
TR4 : 2SK81, 3SK104, 3SK114, 3SK74, 3SK122, 3SK83, 3SK87, 3SK85
TR5 : 2SC2735, 2SC2756, 2SC2757, 2SC3124, 2SC3123, 2SC3082
TR6~7 : 2SC2735, 2SC2756, 2SC2757, 2SC3123, 2SC3124, 2SC3082
2SC3547, 2SC3120
D1~4 : 1T32, 1SV186, MA325, 1SV123, 1T25, 1S2208, 1SV153

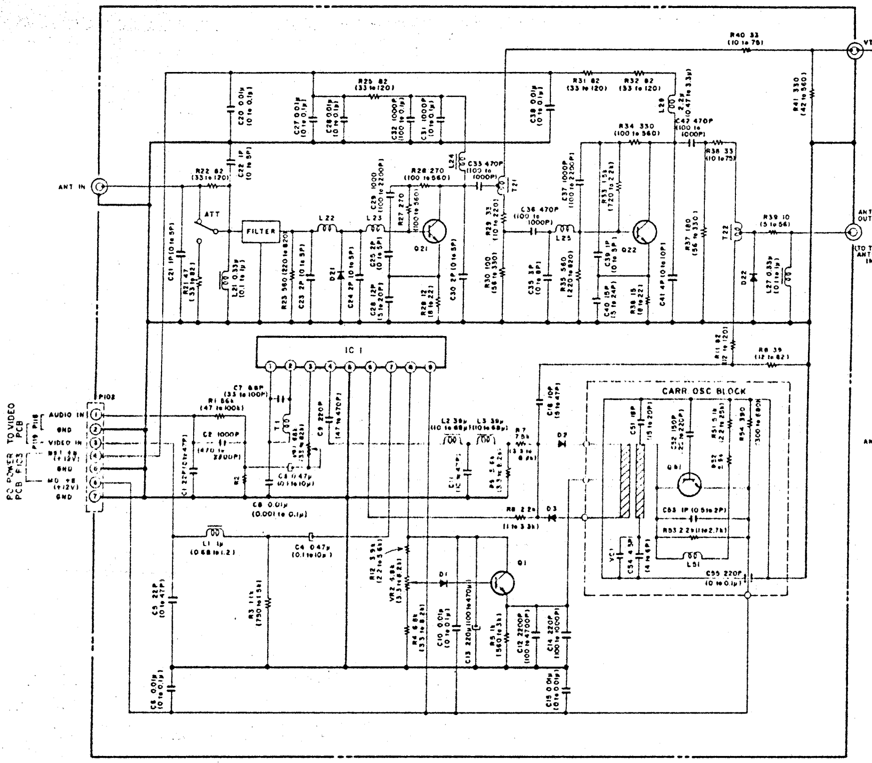
D5~8 : 1SV136, 1T32, MA325, 1SV123, 1T25, 1SV153, 1SV132
D9~13 : 1SS110, 1SS135, 1SS155, MC103A
D14~15 : 1SV146, 1SV89, 1S2339
D16 : HZ9AL, HZ9A, RD8, 2EB, HZS9A, RD8, 2JB, TZ8, 2
D17 : 1S2837, HSM2837, 1SS182, MA151WK, DAN202K, 1SS184
D19 : 1S2835, HSM2835, 1SS179, MA151WA, DAP202K, 1SS181
D20 : 1SS99, 1SS151, 1SS87
D21 : 1SS110, 1SS135, 1SS155, MC103A, 1SS133

	UHF	VHI	VLO
MB	12V	12V	12V
UB	12V	OPEN	OPEN
HB	OPEN	12V	OPEN
LB	OPEN	OPEN	12V

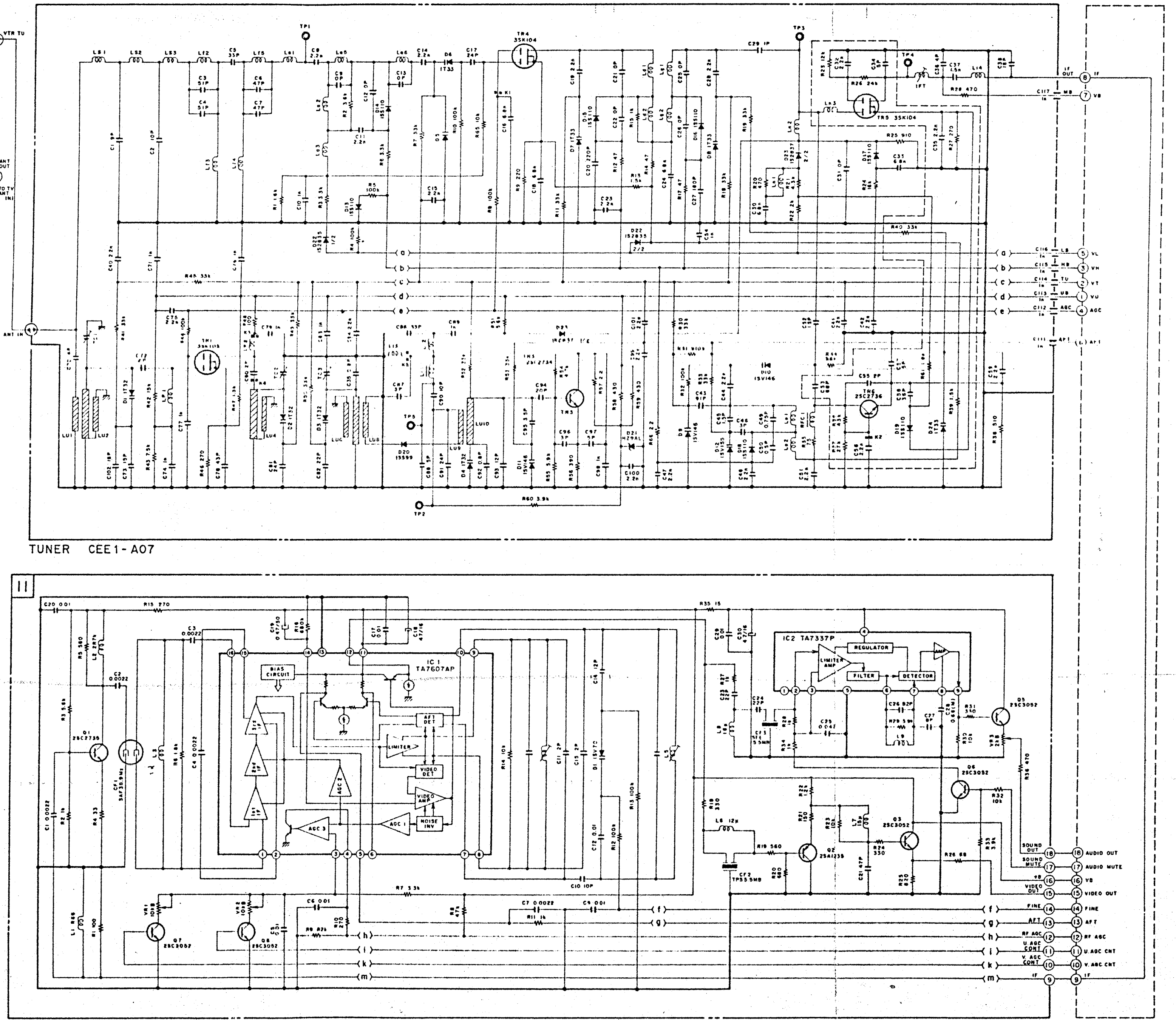
AGC : 7 to 0V
AFT : 6.5±6V

VIF PCB 6A00068A1

VS-303EV-M
TUNER / VIF UNIT
SCHEMATIC DIAGRAM
NO. 15-10 850109A

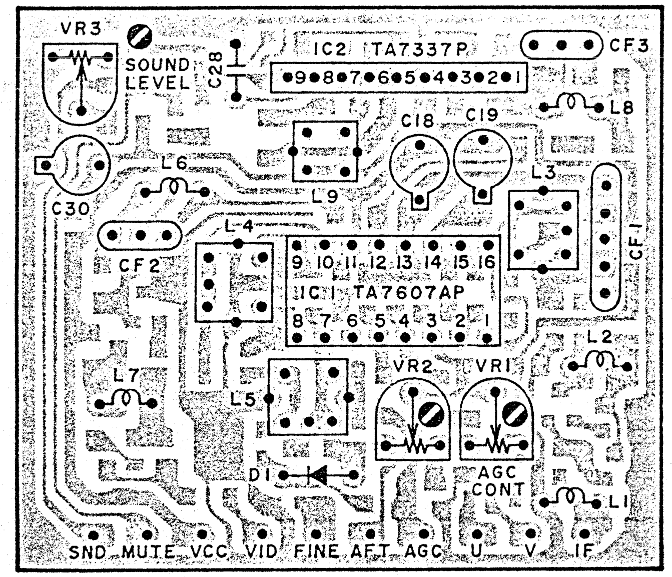

VTR TU
ANT IN
ANT OUT
ATT
FILTER
IC 1
CARR OSC BLOCK
AUDIO IN
GND
VIDEO IN
GND

MODULATOR (ANT BOOSTER/RF CONVERTER) MSL6-023


TP1
TP2
TP3
TP4
TP5
ANT IN
TUNER CEE1-A07
IF OUT
IC 1 TA7607AP
BIAS CIRCUIT
AFT DET
LIMITER
VIDEO DET
VIDEO AMP
AGC 1
NOISE INV
AGC 2
IC2 TA7337P
REGULATOR
LIMITER AMP
FILTER
DETECTOR
AMP
AUDIO OUT
AUDIO MUTE
VB
VIDEO OUT
FINE
AFT
RF AGC
U. AGC CNT
V. AGC CNT
IF
VIF

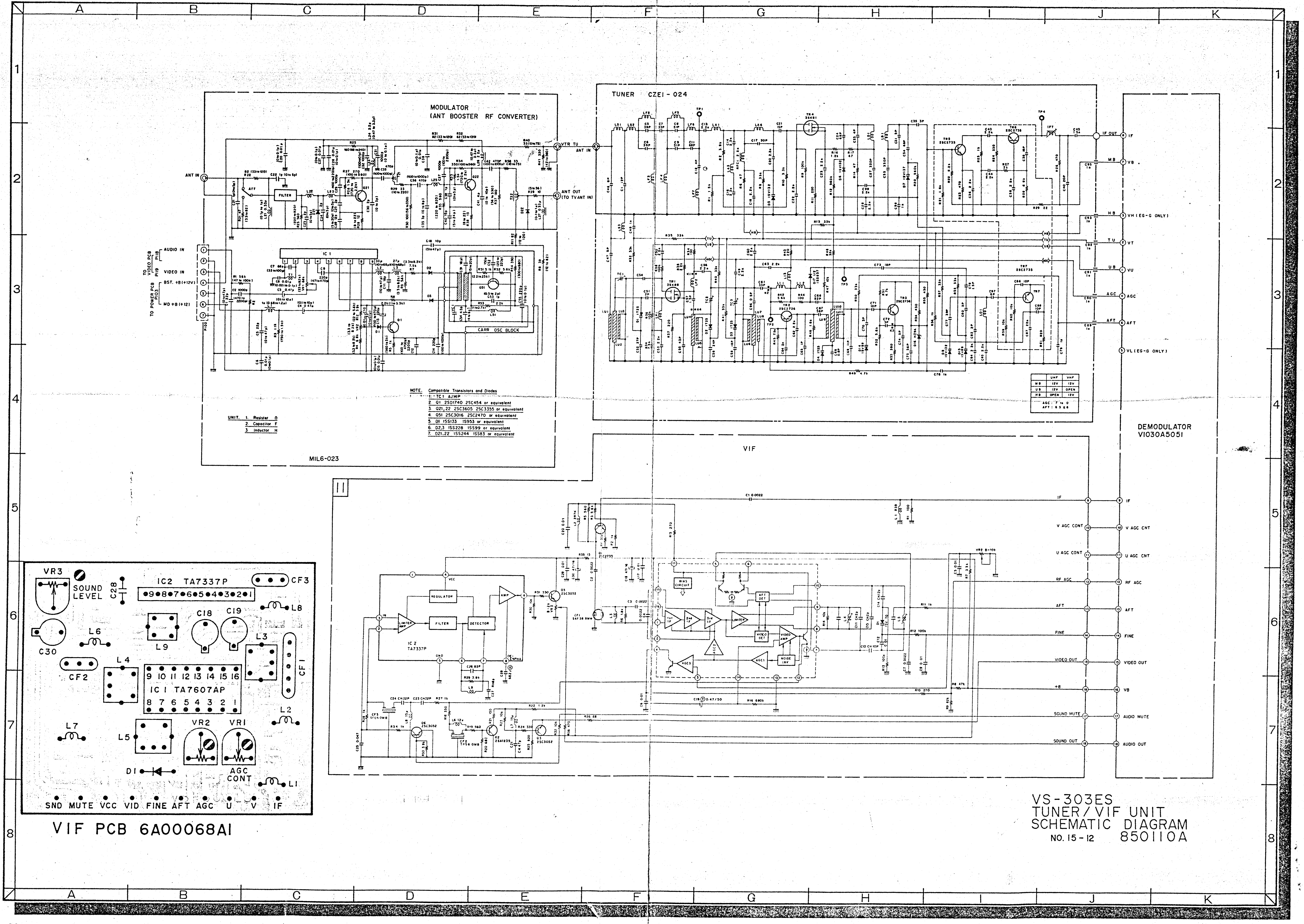
UNIT. 1. Resister Ω
2 Capacitor F
3. Inductor H

Note: Compatible Transistors and Diodes
1. TC1 AJ14P
2. Q1 2SD1740 2SC454 or equivalent
3. Q21, 22 2SC3605 2SC3355 or equivalent
4. Q51 2SC3016 2SC2470 or equivalent
5. D1 1SS133 1S953 or equivalent
6. D2, 3 1SS228 1SS99 or equivalent
7. D21, 22 1SS244 1SS83 or equivalent

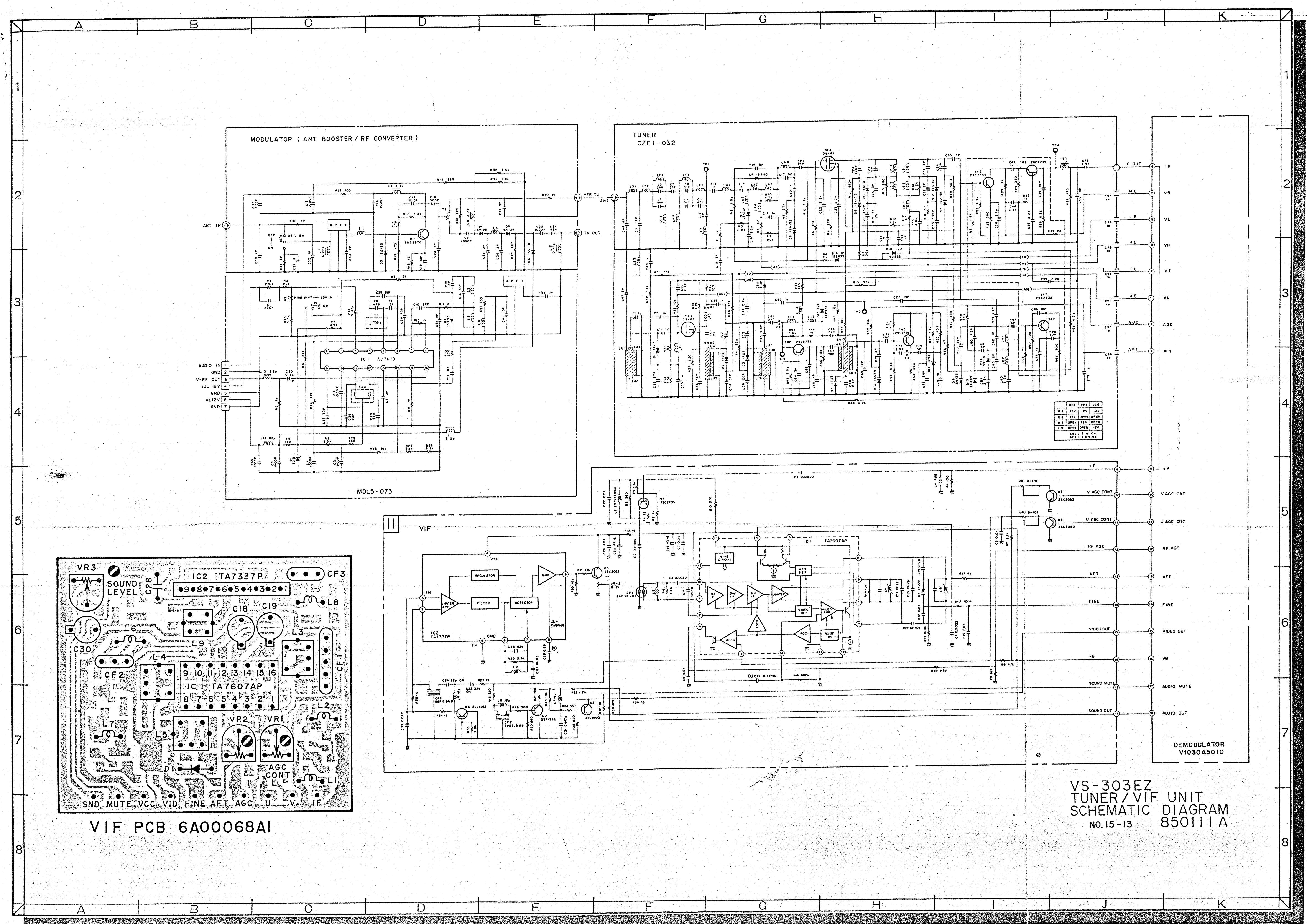

VR3
SOUND LEVEL
C28
IC2 TA7337P
CF3
L8
C18
C19
L6
L9
C30
L3
L4
CF2
IC1 TA7607AP
CF1
L7
L2
L5
VR2
VR1
D1
AGC CONT
L1
SND
MUTE
VCC
VID
FINE
AFT
AGC
U
V
IF

VIF PCB 6A00068A1

VS-303E0
TUNER/VIF UNIT
SCHEMATIC DIAGRAM
NO.15-11 841223A


MODULATOR
(ANT BOOSTER RF CONVERTER)
ANT IN
VTR TU
ANT OUT
(TO TV ANT IN)
FILTER
IC 1
CARR OSC BLOCK
TO VIDEO PCB P118
AUDIO IN
VIDEO IN
TO POWER PCB P102
BST. +B (+12V)
MD +B (+12)
UNIT. 1. Resister Ω
2. Capacitor F
3. Inductor H
NOTE. Compatible Transistors and Diodes
1. TC1 AJ14P
2. Q1 2SD1740 2SC454 or equivalent
3. Q21,22 2SC3605 2SC3355 or equivalent
4. Q51 2SC3016 2SC2470 or equivalent
5. D1 1SS133 1S953 or equivalent
6. D2,3 1SS228 1SS99 or equivalent
7. D21,22 1SS244 1SS83 or equivalent
MIL6-023
TUNER CZE1-024
ANT IN
IF OUT
IF
MB
VB
HB
VH (EG-G ONLY)
TU
VT
UB
VU
AGC
AFT
VL (EG-G ONLY)
UHF
VHF
MB 12V 12V
UB 12V OPEN
HB OPEN 12V
AGC : 7 to 0
AFT : 6.5 ± 6
DEMODULATOR
V1030A5051
VIF
IC 2
TA7337P
REGULATOR
FILTER
DETECTOR
AMP
LIMITER AMP
BIAS CIRCUIT
AFT DET
VIDEO DET
VIDEO AMP
LIMITER
AGC1
AGC2
NOISE INV
V AGC CONT
U AGC CONT
RF AGC
FINE
VIDEO OUT
+B
SOUND MUTE
SOUND OUT
V AGC CNT
U AGC CNT
AUDIO MUTE
AUDIO OUT
VR3
SOUND LEVEL
C28
IC2 TA7337P
CF3
L8
C18
C19
L6
C30
L9
L3
CF2
L4
IC1 TA7607AP
CF1
L2
L7
L5
VR2
VR1
AGC CONT
D1
L1
SND MUTE VCC VID FINE AFT AGC U V IF
VIF PCB 6A00068A1

VS-303ES
TUNER/VIF UNIT
SCHEMATIC DIAGRAM
NO. 15-12 850110A

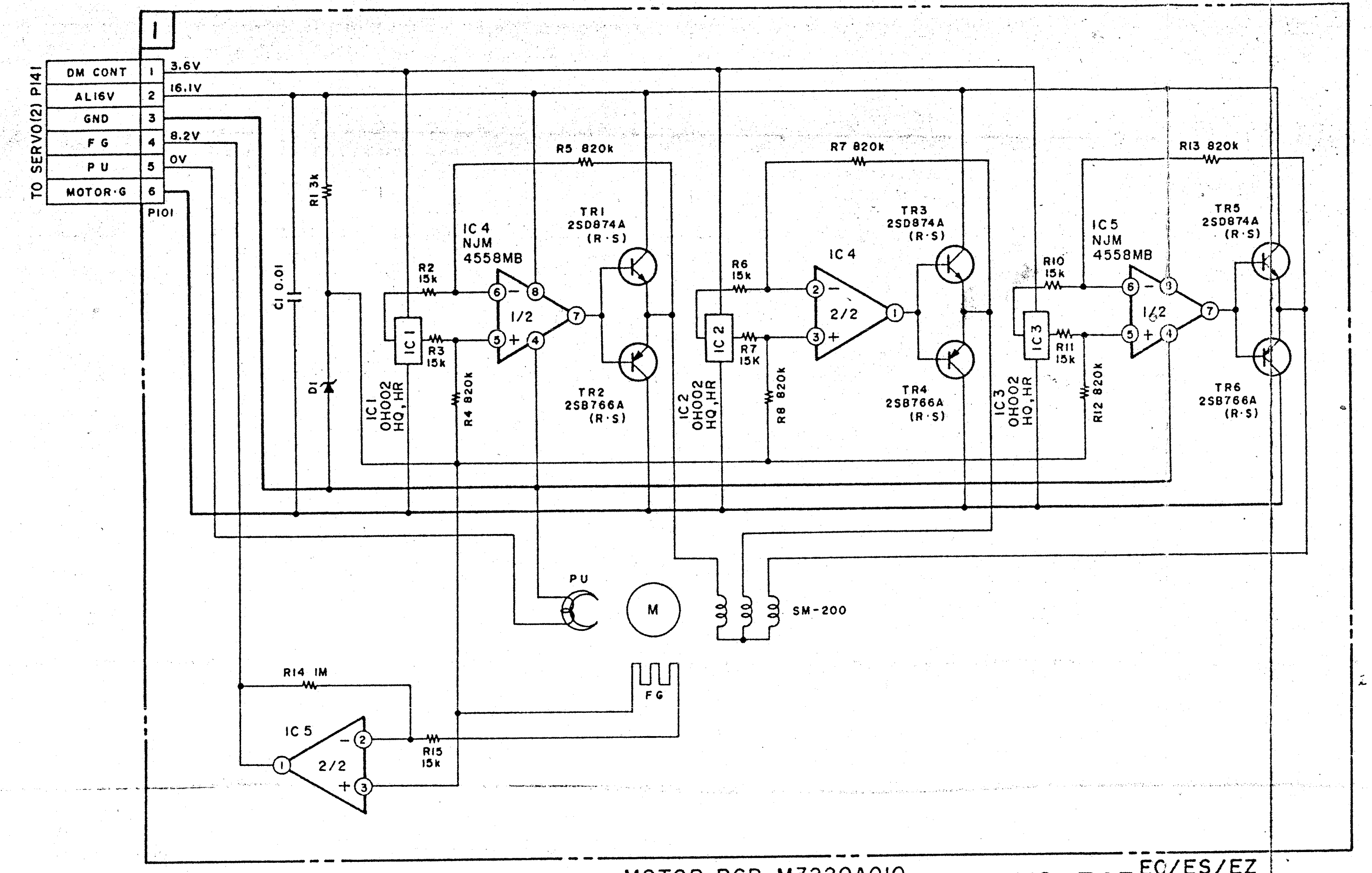

MODULATOR (ANT BOOSTER / RF CONVERTER)
MDL5-073
ANT IN
VTR TU
TV OUT
ANT
AUDIO IN
GND
V-RF OUT
IDL 12V
GND
AL12V
GND
IC1 AJ7010
BPF 2
BPF 1
SAW
TUNER
CZE1-032
IF OUT
MB
LB
HB
TU
UB
AGC
AFT
IF
VB
VL
VH
VT
VU
VIF
IC2 TA7337P
REGULATOR
FILTER
DETECTOR
AMP
LIMITER AMP
DE-EMPHA
VCC
GND
IC1 TA7607AP
BIAS CIRCUIT
AFT DET
VIDEO DET
VIDEO AMP
AGC1
AGC2
AGC3
NOISE INV
V AGC CONT
U AGC CONT
RF AGC
FINE
VIDEO OUT
+B
SOUND MUTE
SOUND OUT
AUDIO MUTE
AUDIO OUT
DEMODULATOR
V1030A5010
VR3
SOUND LEVEL
IC2 TA7337P
IC1 TA7607AP
VR2
VR1
AGC CONT
CF1
CF2
CF3
C18
C19
C28
C30
L1
L2
L3
L4
L5
L6
L7
L8
L9
D1
SND MUTE VCC VID FINE AFT AGC U V IF

	UHF	VHI	VLO
MB	12V	12V	12V
UB	12V	OPEN	OPEN
HB	OPEN	12V	OPEN
LB	OPEN	OPEN	12V

AGC : 7 to 0V
AFT : 6.5 ± 6V

VIF PCB 6A00068A1

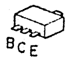
VS-303EZ
TUNER / VIF UNIT
SCHEMATIC DIAGRAM
NO. 15-13 850111A


TO SERVO(2) P141
DM CONT
AL16V
GND
F G
P U
MOTOR·G
P101
3.6V
16.1V
8.2V
0V
R1 3k
C1 0.01
D1
IC1 OH002 HQ,HR
IC2 OH002 HQ,HR
IC3 OH002 HQ,HR
R2 15k
R3 15k
R4 820k
R5 820k
R6 15k
R7 15k
R8 820k
R7 820k
R10 15k
R11 15k
R12 820k
R13 820k
IC4 NJM 4558MB
IC4
IC5 NJM 4558MB
1/2
2/2
TR1 2SD874A (R·S)
TR2 2SB766A (R·S)
TR3 2SD874A (R·S)
TR4 2SB766A (R·S)
TR5 2SD874A (R·S)
TR6 2SB766A (R·S)
PU
M
SM-200
FG
R14 1M
IC5
R15 15k

MOTOR PCB M3220A010

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/8W(J)
ALL CAPACITORS IN μF 50 WV(J)

VOLTAGE INDICATED AT PB MODE MESURED
WITH DIGITAL TAPE TESTER

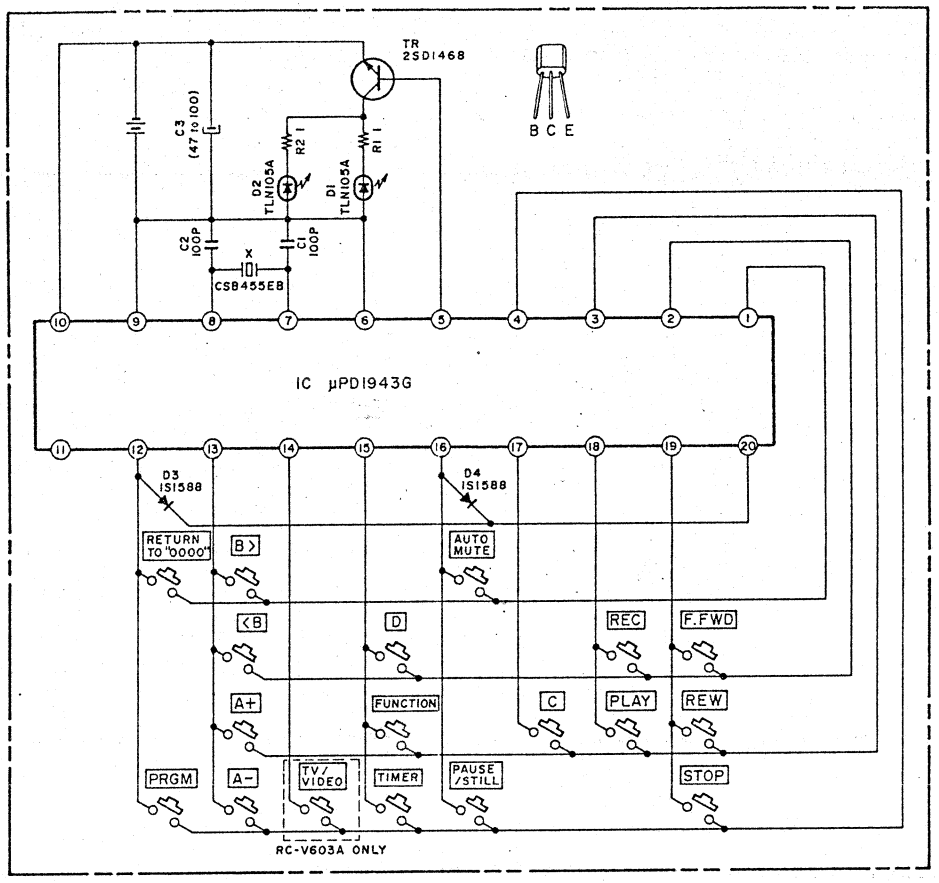


2SB766A
2SD874A

TR2,4,6 ---2SB766A
TR1,3,5 ----2SD874A

VS-303 EC/ES/EZ EA/EG/EV-M
MOTOR
SCHEMATIC DIAGRAM
NO.15-14 841012B (A3)
2

RC-V603A/B

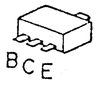

TR 2SD1468
B C E
C3 (47 to 100)
R2 1
R1 1
D2 TLN105A
D1 TLN105A
C2 100P
X
C1 100P
CSB455EB
IC μPD1943G
D3 1S1588
D4 1S1588
RETURN TO "0000"
B>
AUTO MUTE
<B
D
REC
F.FWD
A+
FUNCTION
C
PLAY
REW
PRGM
A-
TV/VIDEO
TIMER
PAUSE /STILL
STOP
RC-V603A ONLY

A+ CANNEL SELECT +
A- CANNEL SELECT -
B > FINE TUNE/TRACKING
< B FINE TUNE/TRACKING
C DISPLAY SELECT
D COUNTER RESET

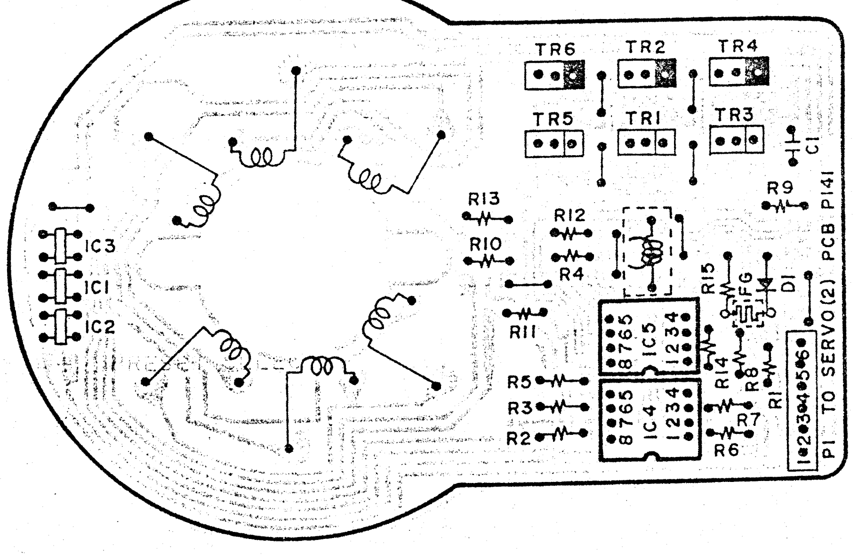
NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W(J)
ALL CAPACITORS IN μF 50WV(J)

RC-V603A/B
REMOTE CONTROL UNIT
SCHEMATIC DIAGRAM
NO.15-15 841019B(A4)

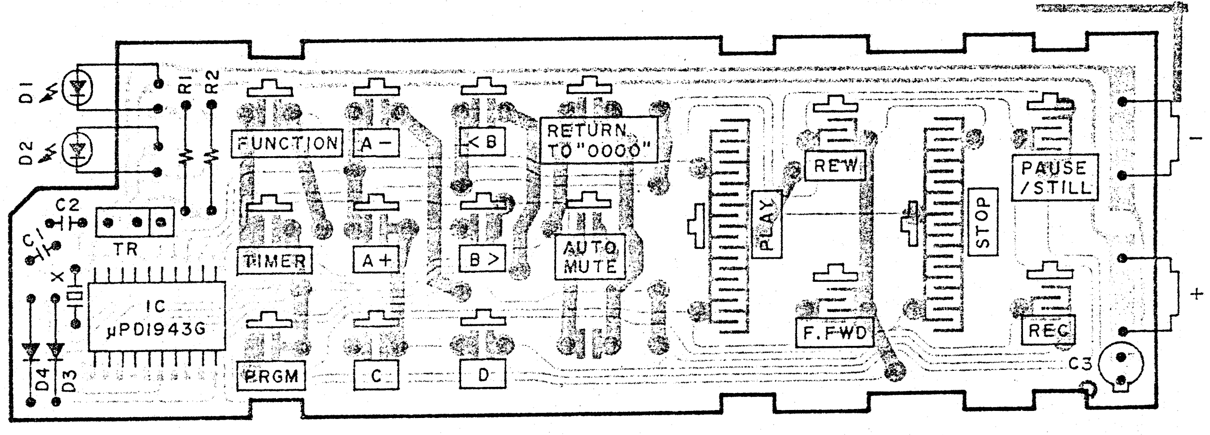
TR2,4,6---2SB766A
TR1,3,5----2SD874A

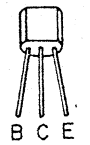


2SB766A
2SD874A


TR6
TR2
TR4
TR5
TR1
TR3
C1
R9
R13
R12
R10
R4
R11
IC3
IC1
IC2
IC5
IC4
R5
R3
R2
R15
R14
R8
R7
R1
R6
FG
D1
TO SERVO(2) PCB P141
P1

MOTOR PCB M3220C5010


D1
D2
R1
R2
C2
C1
TR
X
IC μPD1943G
D4
D3
FUNCTION
A-
<B
RETURN TO "0000"
TIMER
A+
B>
AUTO MUTE
PRGM
C
D
PLAY
REW
STOP
PAUSE /STILL
F.FWD
REC
C3
-
+



2SD1468

●●● = NPN TRANSISTOR

A+ PRESET SELECT +
A- PRESET SELECT -
<B FINE TUNE/TRACKING
B> FINE TUNE/TRACKING
C DISPLAY SELECT
D COUNTER RESET